‘Determinants of success for online communities: An empirical study’

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DEDICATION

I dedicate this thesis to the memory of my mother.  
A constant source of inspiration.
ACKNOWLEDGMENTS

I am greatly indebted to a number of people who made it possible for me to complete this thesis.

Most importantly I would like to thank everyone who contributed to this research by completing the online survey. This thesis would not have been possible without your involvement.

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Finally, I would like to extend a huge thank you to my family, friends and colleagues, especially Lynne Carolan. Your support and encouragement helped me maintain my focus.
DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any tertiary institution and to the best of the candidate’s knowledge this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Leanne Trembath
March, 2011
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ABSTRACT

The traditional notion of community is typically tied to a specific population or geographical location. Contemporary communities, however, are not necessarily limited by geographical boundaries. Over time, practices and communication patterns have changed and an increasing number of people are now using the internet to create and maintain their social networks. It is argued, within this thesis, that an important role of new technologies, such as the internet, is to enable a sense of community ‘togetherness’ to be maintained regardless of time and location.

The convergence of internet technologies and social networks has also fuelled the popularity of online social networking sites such as Facebook (www.facebook.com) and Ning (www.ning.com). The sites provide opportunities for individuals to participate in a range of social groupings. Grounded in ‘people to people’ interactions, the ‘online communities’ have the potential to provide support, friendship, information and a sense of belonging to each of the members. They may also be sources of social capital. It is argued, within this thesis, that the presence of social capital is intrinsically linked to positive outcomes across a range of areas, including improved health and greater wellbeing.

However, while the value of maintaining a sense of social connectedness has been well documented, there has been little empirical research examining the determinants of success of online communities. This thesis seeks to address that omission by empirically testing a conceptual model that suggests both technical and social factors impact on the success of online communities.

Data was collected from 202 members of the general population via an online survey. A Partial Least Squares (PLS) approach was used to examine the conceptual model. The results strongly supported the applicability of the model.

The findings of the study suggest that a member’s sense of belonging within an online group is critical to the success of an online community. The research findings also
indicate that individuals who have a sense of belonging within the online community are more likely to be satisfied with the community. Individuals who have a sense of belonging within the online community are also more likely to have a sense of loyalty towards the online community. As such, it is important for those managing online communities to take steps to encourage members to feel that they are a part of the community.

There were also notable similarities and differences between the outcomes of this thesis and a study conducted by Lin (2008). Most notably, Lin (2008) held the view that system characteristics determined member satisfaction. The findings of this study, however, highlighted the dominant contribution of sense of belonging towards member satisfaction. Lin (2008) also assumed that member satisfaction influenced sense of belonging. The findings of this study found the reverse to be true. The hypothesised path between sense of belonging and member satisfaction was found to be positive and significant.

Key words: community, the internet, information technology, social capital, social networking, Web 2.0, trust, sense of belonging, member loyalty, digital inclusion and online communities.
PART I: THESIS OVERVIEW

Chapter 1: Introduction
CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The presence of social capital within our society has become increasingly important economically, politically and socially. It has been linked to positive outcomes across a range of areas from improved health and greater well-being to improved parenting (Glaeser 2001). More specifically, the underlying sense of social connectedness has been linked to a reduced risk of Alzheimer’s disease, while the associated levels of trust have been linked to lower crime rates and improved government (Organisation for Economic Co-operation and Development (OECD) 2001). These observations raised questions such as what is social capital and where does it come from?

An exploration of the literature revealed that social capital is intrinsically linked to social networks. Social networks have, in simple terms, been described as sets of people ‘connected by socially meaningful relationships’ (Wellman 1997, p. 179). It has been argued that these networks are underpinned by the notion of trust, which gives rise to cooperative behaviours within or among the groups. Reportedly, the most common ways to measure levels of social capital and access to social capital are through participation rates in different types of associational existences and through self-reported levels of trust (OECD 2001).

Further exploration of the literature revealed that the convergence of the internet and social networks has enabled a sense of community ‘togetherness’ to be maintained, regardless of time and location (Wenger et al. 2005). As a result, an increasing number of people are utilising computer networks to maintain their social networks. Moreover, the popularity of the internet has made it possible for individuals to access or create a seemingly infinite number of social networks. Social networks are now more personalised and mobile than ever before.
While the value of maintaining a sense of social connectedness has been well documented, there has been little empirical research examining the determinants of success of internet-based social networking environments. This thesis sought to address that gap by testing, empirically, a model that integrated both technical and social constructs. The model was a modified version of the virtual community success model developed by Lin (2008).

1.2 RESEARCH OBJECTIVES

The primary objective of this research was to investigate the interrelationships between the technical and social factors that impact on online community success. The objective was achieved by assessing the applicability of a modified version of the virtual community success model developed by Lin (2008).

The model, which incorporated social and technical factors that impact on online community success, was based on the work of previous researchers. Significant influences included DeLone and McLean’s (1992) well established IS Success Model, and later modifications of this model by Seddon and Kiew (1996) and Seddon (1997). The research methodology used in this study supported the testing of the model.

The model was comprised of the following seven dimensions;

- Information quality
- System quality
- Trust
- Social usefulness
- Member satisfaction
- Sense of belonging
- Member loyalty.

The model assumed a relationship between information quality, system quality, sense of belonging and member satisfaction. It also linked a member’s sense of trust and social usefulness to a member’s sense of belonging. Finally, it linked member satisfaction and sense of belonging with member loyalty. The hypothesised interrelationships between
the constructs led to the formulation of the hypotheses that are displayed in Table 1.1. The status of each hypothesis was tested within this thesis.

**TABLE 1.1: SUMMARY OF HYPOTHESES**

<table>
<thead>
<tr>
<th>Hypothesis 1</th>
<th>Individuals who are satisfied with the quality of the content are more likely to be satisfied with the community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 2</td>
<td>Individuals who are satisfied with the quality of the online application are more likely to be satisfied with the community.</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>Individuals who have a sense of belonging within the online community are more likely to be satisfied with the community.</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>Individuals who are satisfied with the community are more likely to feel a sense of loyalty towards the online community.</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>Individuals who have a sense of belonging within the online community are more likely to have a sense of loyalty towards the online community.</td>
</tr>
<tr>
<td>Hypothesis 6</td>
<td>Individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community.</td>
</tr>
<tr>
<td>Hypothesis 7</td>
<td>Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.</td>
</tr>
</tbody>
</table>

The secondary objective of this thesis was to determine whether or not the findings developed from such a uniform group could be applied to the general population within
a contemporary context. As such, the applicability of the modified version of the virtual community success model was tested within the general population. The research rationale was that Lin (2008) had only tested her model, several years ago, using a sample population of undergraduate students. Lin (2008, p. 5) described this sample as a homogenous group representing a younger generation who were using online communities ‘to obtain enjoyment, entertainment, amusement and fun’ Lin (2008) was adamant that the findings derived from such a uniform group could not be applied to the general population.

1.3 SIGNIFICANCE OF RESEARCH

There has been little empirical research examining the determinants of success of internet-based social networking environments. This thesis sought to address the oversight by testing, empirically, a model that integrated both technical and social constructs. The model was a modified version of the virtual community success model developed by Lin (2008).

The research findings provide insights into the interrelationships between the technical and social factors that impact on online community success. They also form a basis for discussion, analysis, and comparison by future researchers. At an operational level, the findings will inform practitioners who are to seeking to enhance the effectiveness of their online communities.

1.4 RESEARCH METHODOLOGY

Data was collected via an online survey. This method enabled the researcher to recruit participants both nationally and internationally. If more traditional methodologies had been implemented, communication with such geographically diverse participants would not have been practical or financially viable (Beddows 2008).

Data was collected from individuals within the general population. The choice to gather data from the perspective of individuals was consistent with Wenger et al.’s (2005) view that, even if technology is designed for communities, it is individual members who ultimately experience the technology. The utilisation of a self-reported online survey
enabled the researcher to engage a large, diverse sample, at low cost (Kraut et al. 2004). The research findings of Gosling, Vazire, Srivastava and John (2004) also supported the choice. They compared data from a self-selected, self-reported online survey with 510 published, more traditional paper-based methods and found that internet-based data samples were more representative of the general population than data samples derived from more traditional methods.

Assessment items in the survey were sourced from instruments that had been successfully utilised within past research projects. A Research Matrix, including research objectives, constructs and assessment items is displayed as Table 6.1.

Prior to the survey being made available to members of the general public, the project was successfully submitted for ethical review to the Swinburne Human Research Ethics Committee (SUHREC).

Following ethical clearance, the online survey was subjected to useability testing as suggested by Dillman, Smyth and Christian (2008). Eleven volunteers provided feedback about the survey wording and layout. The feedback informed a revision of the survey that led to three questions being modified. In its final form, the online survey was administered incorporating a series of check boxes and four open-ended questions.

The survey was administered online through Swinburne Opinio. It was made available to members of the general public on 1st August, 2009 and it was closed on 31st October 31, 2009. The duration of the survey was three months. Participation was voluntary and the data was self-reported.

Participants were recruited using a snowballing effect. The survey was initially promoted using contacts such as colleagues, family and friends of the researcher. Owners and moderators of a range of online communities were also invited to participate in the research via email.

Participants were required to indicate, at the commencement of the survey, that they were at least 18 years of age and belonged to at least one online community. The
questionnaire was configured so that ineligible participant responses could be excluded from analysis. This treatment of self-identified minors was in accordance with recommendations put forward by Kraut et al. (2004).

The data from all completed surveys was transferred electronically, from Opinio, to a standard statistical software program, SPSS. The data was then checked for inconsistent responses which, once identified, were subsequently removed from further analysis. At the conclusion of the data check, 202 completed online surveys were available for analysis.

Next, the demographic characteristics of respondents, including gender, age and country of residence, were analysed and the modified virtual community success model was tested using the Partial Least Squares (PLS) method. The calculation of the path coefficients between the constructs enabled the strengths of the relationships to be determined (Iivari 2005) and the hypothesised relationships to be assessed.

In addition, each latent construct was measured by multiple assessment items. The calculation of the item weightings enabled the relationship between the assessment item and the latent construct that it measured to be determined. This, in turn, enabled the reliability of the measures to be assessed (Hulland 1999).

Finally, as recommended by Hulland (1999), the $R^2$ values of the dependent constructs were examined to determine the extent to which variances in the construct could be explained by the model.

1.5 OUTLINE OF THESIS

This thesis is divided into four parts. Part I provides an overview of the thesis. It describes the background to the research and the research objectives. Part II takes the form of a literature review. It provides a theoretical background to the study and is comprised of three chapters: ‘The concept of community’, ‘The internet’ and ‘Social capital and social networks’. Part III presents the conceptual model and methodology. Part IV documents the data analysis and the research findings. A list of references and appendices is included at the end of the thesis.
More specifically, Chapter 1 documents the aims and significance of this research. It also provides an overview of the research methodology. The primary objective was to investigate the interrelationships between the technical and social factors that impact on online community success. This was achieved by testing the applicability of a modified version of the virtual community success model developed by Lin (2008).

Chapter 2, the first chapter in the literature review, provides a theoretical background to this study through the exploration of the notion of community. In the process, a lack of consensus across the corpus is highlighted. The chapter also provides an insight into the sociological origins of the notion of community. It is maintained that, although communities have undergone significant transformations over time, community life is thriving within a contemporary context (Guest & Wierzbicki 1999; Wellman 2001; Wuthnow 1991; Wuthnow 1998; & Wellman 2002). It is also contended that over time, the traditional notion of community has been redefined to include online communities (Wellman 1997).

Chapter 3, the second chapter in the literature review, commences by providing a brief overview of the origins of the internet. It is also argued that, within a contemporary context, the pervasive nature of the internet and the accompanying information explosion has meant that the ability to successfully engage online is now more important than ever before. The chapter considers why the internet has become such a powerful force within society. It also notes that, while an increasing number of people are participating online, there has been very little research examining the factors that contribute to the success of online communities. This research seeks to address that omission.

Chapter 4, the final chapter in the literature review, explores and clarifies the notion of social capital for the purposes of this study. In the process, two very different conceptual understandings of social capital are considered. One understanding emphasises the individual nature of social capital and one emphasises its collective nature. It is also acknowledged that there is a growing body of evidence to suggest that the OECD (2001) definition of social capital is emerging as a common basis for
international comparability. On this basis it is argued that, for the purposes of this study, social capital will be defined as ‘networks, together with shared norms, values and understandings that facilitate co-operation within or among groups’ (OECD 2001, p. 41).

Chapter 5 establishes that the modified virtual community success model provides a sound framework for examining the factors that influence the success of an online community. A set of seven associated hypotheses is also identified.

Chapter 6 defines the key constructs contained within the modified virtual community success model. Survey items are then either selected or adapted from previous studies, on the basis that they are suitable for measuring the key constructs. This approach is consistent with Seddon (1997) and DeLone and McLean’s (1992) view that success measures should suit the context of the empirical research.

Chapter 7 outlines the methodology used for data collection within this study. Key elements of the online survey are highlighted and the testing, subsequent modifications, administration and promotion of the survey are detailed.

Chapter 8 and Chapter 9 both focus on the results of data analysis. Chapter 8 provides a demographic overview of the respondents. It also provides a preliminary analysis of the data gathered via the online survey including responses to the open ended question; ‘what makes online communities successful?’ Chapter 9 details the analysis and the results in relation to the set of hypotheses tested.

Chapter 10 documents the conclusions regarding the research problem. It also details research limitations, considerations for managers of online communities and the implications for future research. The findings of this study supported each of the hypotheses tested. The research findings also uncovered similarities and differences between the outcomes of this study and the study conducted by Lin (2008). Most notably, Lin (2008) assumed that member satisfaction influenced sense of belonging. The findings of this study found the reverse to be true. The hypothesised path between sense of belonging and member satisfaction was found to be positive and significant.
1.6 LIMITATIONS

The limitations inherent in the methodology are described in detail in Chapter 7: Research methodology. Limitations linked to the relevance of the sample and data collection methods are described in Chapter 10.3: Limitations.

Within the context of this research, the most notable limitations centred on the anonymous, self-reported nature of the online survey. Concerns about the integrity of the quantitative data, and about how well the ensuing sample represented the general population, had to be considered.

In response to the limitations, a number of measures were implemented. For instance, the data was screened for inconsistencies prior to final analysis to mitigate the impact of flawed responses. The process is detailed in Chapter 8: Preliminary analysis.

One unanticipated constraint that had to be managed centred on timeframes. Prior to the online survey being made publicly available, the researcher anticipated that four weeks would be enough time in which to recruit 200 participants. In reality it took three months. The extended duration could have arisen from the anonymous nature of the survey and the associated lack of obligation to participate.
PART II: LITERATURE REVIEW

Chapter 2: The concept of community

Chapter 3: The internet

Chapter 4: Social capital and social networks
CHAPTER 2

THE CONCEPT OF COMMUNITY

2.1 CHAPTER OVERVIEW

The aim of this chapter is to provide a theoretical background to this study through the exploration of the notion of community.

The chapter commences with an exploration of the various notions of community. The lack of consensus across the corpus is highlighted. The sociological origins of the notion of community are described and the traditional view that loss of community is an inevitable consequence of industrialisation is presented. Finally, a more contemporary view is described and it is noted that, in spite of the affects of modernisation, communities have continued to flourish (Guest & Wierzbick 1999; Wellman 2001; Wuthnow 1991, 1998). It is argued that, over time, community life has not been lost but has, instead, been transformed (Quan-Haase & Wellman 2004).

It is noted that many people currently live in long-distance communities (Wellman & Wortley 1990) as they socialize beyond the boundaries of their local neighbourhoods (Quan-Haase & Wellman 2004). The point is made that, while all social relations have not been totally liberated from geography, the notion of community can no longer be analysed solely on the basis of neighbourhood (Wellman 1996). It is argued that the uptake of technologies underpins many of the changes in the social construct of community.

Finally it is argued that, over time, the traditional notion of community has been redefined to include online communities (Wellman 1997). The term ‘virtual communities’ is presented. They are described as ‘social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace’ (Rheingold 1993, p. 5). It is noted that virtual communities have the potential to provide
support, friendship, information and a sense of belonging to each individual (Wellman, Carrington & Hall 1988; Katz 1999; Wellman 2001; Quan-Haase & Wellman 2004).

2.2 THE NOTION OF COMMUNITY

Over the years, scholars and practitioners have written a great deal about all aspects of community. The seminal work of Hillery (1955) highlighted the difficulty of reaching consensus. Hillery (1955, p. 111) observed that, ‘It is characteristic of any discipline that its members are not always able to agree on the nature of the phenomena they examine.’ He noted that it is particularly difficult to reach consensus when focusing on concepts and abstractions, such as the notion of community.

Most significantly Hillery (1955) analysed 94 definitions of community to ascertain the extent of agreement between the definitions. He found that all except three of the definitions clearly mentioned ‘the presence of a group of people, i.e. persons in social interaction’ (Hillery 1955, p. 115). Furthermore, he found that the definitions which clearly mentioned social interaction fell into two main subcategories: those that mentioned the presence of some geographic area, and those that mentioned the presence of some common characteristic other than location. He also found that 69 of the definitions shared the view that ‘social interaction’, ‘area’ and a ‘common tie’ or ‘ties’ are normally found in community life. A total of 70 mentioned that geographical location and social interactions are essential elements of community (Hillery 1955).

While acknowledging that his analysis did not necessarily include all notions of community, he did claim that it was representative. The significance of his work within the context of this thesis is that he concluded ‘beyond the concept that people are involved in community, there is no complete agreement as to the nature of community’ (Hillery 1955, p. 119).

More recently, Macionis (2007) described the findings of an unpublished work by Sutton and Munson (1976) that compared the definitions of community in a range of material published between 1954 and 1973. Macionis (2007) claimed that approximately 70% of all definitions portrayed community as a specific population, place or location. He also claimed that only 12% of the definitions surveyed highlighted
the interactional aspects of community. Macionis (2007) concluded that the body of literature supported a somewhat static model of community such as a peasant village, small town or family group.

Given that the published material underpinning the analysis predated widespread access to mobile phone technologies and the internet, it is not surprising that Macionis (2007) linked the notion of community to specific population or places. The findings do, however, raise questions about whether or not communities of place and a sense of ‘we’ locally would be as relevant within a contemporary context.

Offering a very different perspective, Blaug et al. (2006) argued that important ideological differences underpin the range of interpretations of the term ‘community’ across the corpus. They contended that ‘community’ has been frequently used by advocates on both the left and the right of the political spectrum (Blaug et al. 2006).

They argued that the Left has employed the language of community to distinguish marginalised groups. By way of example, Blaug et al (2006) highlighted the term ‘black community.’ They criticised usage such as this, because instead of promoting the diversity of the group, it conceals it.

At the other end of the political spectrum is the conservative Right. Blaug et al. (2006) claimed the conservative Right has used the notion of community to defend traditional privileges like the right to hunt. They argued, for instance, that the notion that the countryside is a community that cannot be understood by non-locals has proved to be a great campaign tool (Blaug et al. 2006). They also claimed that the notion that a community is being threatened has often been used to orchestrate opposition to immigration.

Blaug et al. (2006, p. 13) suggested that the various notions of community may be plotted along a different type of spectrum. At one end of the spectrum they described a community as being ‘intentional,’ with individuals freely able to join and agree on common goals and standards. At the other end of the spectrum, they described
communities of ‘limited liability,’ in which the sense of community is minimal and there is little member participation (Blaug et al. 2006).

As recently as 2006, Blaug et al. (2006) observed that, despite the fact there seems to be a considerable body of work describing types of community, reaching consensus on the nature of community still appears to be very problematic.

2.3 A HISTORICAL PERSPECTIVE

It has been argued by some that the concept of community was introduced, at least partly, as a means of expressing anxiety about the social effects of industrialisation (Ferlander 2003). The following excerpt taken from German sociologist Ferdinand Tonnies’ work, Gemeinschaft and Gesellschaft provides us with a clear insight into the uneasiness of that period;

In the city as well as in the capital, and especially in the metropolis, family life is decaying. The more and the longer their influence prevails, the more the residuals of family life acquire a purely accidental character. For there are only few who will confine their energies within such a narrow circle; all are attracted outside by business, interests, and pleasures, and thus separated from one another’ (Tonnie 1887, p. 268)

The seminal work of Tonnies (1887) identified two social groupings; Gemeinschaft and Gesellschaft.

Gemeinschaft is often translated as ‘community’ with its central concept being family life, neighbourhood bonds and ensuing feelings of togetherness. Village and town communities are described as extensions of family life with kinship and inherited status essential elements of full participation. Gemeinschaft was formed around an instinctive force known as essential will, or Wesenwille. Within this context Tonnies (1887) believed that individuals saw themselves as a means of serving the goals and aims of the social grouping (Truzzi 1971).
Gesellschaft, on the other hand, is often translated as ‘society.’ It is often exemplified by city or state (Truzzi 1971). Gesellschaft was formed around a deliberative, purposeful and goal-oriented will known as arbitrary will, or Kurwille. Within this context Tonnies (1887) believed that individuals viewed the social grouping as a means of furthering their individual goals (Truzzi 1971).

Tonnies (1887) argued that industrialisation would result in the destruction of Gemeinschaft and the rise of Gesellschaft. A commonly held viewpoint is that Tonnies (1887) adopted this pessimistic stance in response to his underlying hatred of urbanisation (Truzzi 1971). Noting that Tonnies (1887) has been criticised for favouring and romanticising traditional societies, Macionis (2007) adopted a slightly different perspective. He argued that Tonnies (1887) did not see modern society as being worse than pre-industrial society. He claimed, instead, that it was Tonnies’ (1887) disapproval of growing individualism which formed the underlying basis for his work. Macionis (2007) argued that Tonnies (1887) harboured a fear that the increasing internal diversity of society would give rise to a condition in which society provides little moral guidance to individuals, known as anomie.

Another classical sociologist, Durkheim (1893), also feared anomie. Unlike Tonnies (1887), however, Durkheim (1893) did not see the loss of community as an inevitable consequence of modernisation (Obst et al. 2001). Central to Durkheim’s work was the notion of order (Giddens 1976). Durkheim (1893) argued that within each individual is a duality. Each has one conscience that is totally rooted within our inherited social grouping and one that is nothing more than an extension of society. Durkheim (1893) claimed that it is the latter that makes us an individual. It is also the latter that leads us to anomie (a condition in which society provides little moral guidance to individuals), as we seek all that is desirable that we believe modern society may offer (Elwell 2003). After observing the increasing division of labour brought on by modernisation and its impact on social life, Durkheim (1893) observed that modern society has a tendency to build communities around interest rather than locality. This raises the question of whether or not the tendency has continued into the present. The findings from the study will provide a valuable insight into this area.
More recently, Macionis (2007) argued that it has been generally accepted that urbanisation and the associated changes in the character of kinship and rooted neighbourhood have signalled the decline of community. While Putnam (1995) expressed the view that the decline in community is substantial, Fischer (2001) argued that it is often negligible or short-term. The Putnam-Fischer debate, observed Wellman and Leighton (1979), is an extension of a 150-year long tradition in the social sciences attempting to determine whether community has declined or flourished since the Industrial Revolution.

Offering a slightly different perspective, Quan-Haase and Wellman (2004) argued that advocates of the ‘community lost’ school of thought see industrialisation and the associated social changes such as urbanisation as the cause of the demise of community life. While Costa and Kahn (2001) specifically linked the increase in women’s work hours to the decrease in entertaining at home, Putnam (2000) noted that the advent of industrialisation was accompanied by an increase in the number of people participating in activities that were essentially individualistic, such as watching television. A lack of public spaces within urban developments has also been blamed for the demise of community life (Quan-Haase & Wellman 2004).

Giddens (1976) argued that classical theories about industrialisation have no relevance within a contemporary framework, should be discarded, or at least dismantled. Subscribers of the ‘community liberated’ school of thought argue that community life has not been lost but has, instead, experienced major transformations (Quan-Haase & Wellman 2004). It has been suggested, for instance, that new modes of transportation and communication have enabled the creation of non-localised communities (Quan-Haase & Wellman 2004).

The notion of community within a contemporary context is more fully explored within the next section of this thesis.
2.4  A CONTEMPORARY PERSPECTIVE

The most commonly recognised community is the residential neighbourhood (Blaug et al. 2006). Macionis (2007, p. 132) argued that the theoretical link between residential neighbourhoods and the concept of community is based, in part, on the belief that ‘communal forms must involve a stable pattern of physical proximity.’ Black and Hughes (2001) identified these localised communities of location by their physical or geographical boundaries.

Within a contemporary framework it has been argued that these local communities not only provide useful reference points for the delivery of end user services, but that social relationships flourish within them (Blaug et al. 2006). Most significantly, a study conducted by Bott (1971) found that it is possible for local communities to be the hubs within working class, residential neighbourhoods. Bott (1971) attributed this finding to the residential and social stability within the working class area analysed. Emphasising the importance of these local relationships, Willmott (1989) described the communities as ‘communities of attachment’.

However, while the most easily identifiable communities of attachment are residential, it is also possible for them to be non-residential. Blaug et al. (2006), for instance, observed that as we progress through the stages of life, we become members of various communities of attachment, such as those related to school or work communities. While Smith (1996) was able to categorise these communities as either ‘institutional’ or ‘organisational’, Blaug et al. (2006) noted a degree of difficulty in actually identifying, contacting and communicating with the groups. They attributed much of the difficulty to the dynamic nature of communities and the complex overlaps as the borders delineating them continue to change. Moreover, they observed that the composition and boundaries of a community can be hotly contested by both participants and non-participating members (Blaug et al. 2006).

More recently, Macionis (2007) highlighted a number of studies, including Bott (1971) and Gans (1967), which described the friendship network as being a prevalent social construct among contemporary urbanites. The work of Gans (1967) provided evidence of the development of non-local friendships among higher status, mobile individuals.
living in Levittown, America. Similarly Bott (1971) conducted a study of twenty families in London, England. The findings indicated that the higher-status families did not consider their immediate neighbourhood to be a source of friends. The study found that participation within communities primarily defined by locality had significantly less appeal than participation within communities formed around common tastes and interests. Drawing on the earlier work of Tonnies (1887), Macionis (2007) described these friendship groups as being based on a union of the minds.

Along similar lines, Wellman (2001) claimed that physical closeness does not necessarily mean social closeness (Wellman 2001). He postulated that most North Americans have very few interrelationships with people within their neighbourhoods. He added that individuals rarely know their neighbours and even if they do, they rarely know them well (Wellman 2001). He drew on the work of Smith (1999) to substantiate his claims, stating that, over the last twenty-five years, the number of Americans regularly socialising with their neighbours has been declining. Stressing the point, he added that from 1974 to 1999, there had been a ten percent drop in the number of people who had spent several evenings a week socialising with neighbours.

Many of the changes in social patterns have been attributed to the adoption of new technologies. It has been widely acknowledged, for instance, that enablers such as cars, aeroplanes and telephones have moved social interactions away from localised contexts to more geographically dispersed contexts (Wellman 1997, 1999; Wellman & Wortley 1990; Wellman & Tindall 1993). It has also been well documented that the uptake of mobile technologies has changed the dynamics of human interactions (Wellman & Wetherell 1996; Wellman, 1999). Through the availability of a proliferation of mobile phones and wireless computing options, individuals are now able to notionally communicate with anyone regardless of time and place. Individuals now operate within an extensive, mobile social system within which they regularly encounter non-locals (Macionis 2007).

Changes in the ways people socialise have resulted in individuals becoming the primary points of connectivity, and in the process there has been a significant shift away from households and workplaces being primary points of connectivity (Wellman 2001). The
wider implication of this redefinition is that individuals are no longer necessarily contained within a particular social network. Contemporary individuals can easily switch between networks (Wellman 2001) to aggregate a unique set of personal communities, usually centred on shared activities or shared identities (Blaug et al. 2006). It has been observed that most people now operate in multiple, thinly connected, partial communities as they deal with networks of kin, neighbours, friends, workmates and organisational ties’ (Wellman 1999).

Extending the argument, Wellman (2001) postulated that, within a contemporary context, communities of interest are more likely to be made up of a high percentage of people who enjoy each others company and a low percentage of people who are forced to interact with each other because they are located within the same neighbourhood, kinship group, organisation, or workplace. He also observed that within the western world, only a minority of community ties operate in the public contexts of neighbourhood, formal organisations or work. He noted that within that framework ‘neighbourhoods are no longer important sources of community’. Exaggerating the point, Wellman (2001) argued that neighbourhoods have evolved into no more than ‘variably safe and salubrious milieus from which people sally forth in their cars, telephone from their kitchens, or email from their dens.’ He added that, over time, the home has been redefined ‘as a base for relationships that are more voluntary and selective than the public communities of the past’ (Wellman 2001, p. 233).

Despite the seemingly overwhelming body of evidence supporting the notion that community should no longer be bound by locality (Gans 1967; Smith 1999; Wellman 2001), Ife (1995) adopted a different stance. Ife (1995) reaffirmed the importance of communities based on location, and warned against an overemphasis on communities of interest. Underpinning this view was his concern that a rise in the number of communities of interest might contribute to the isolation of communities of location. He was fearful that this would result in the ‘failed integration of diverse populations’. Based on his belief that disadvantaged people are generally not able to extend their activities beyond their local neighbourhood, he stressed the importance of local communities of place. He argued that local communities provide an important avenue
for the resolution of problems that need person-to-person interactions to achieve positive local solutions.

Offering a slightly different perspective Black and Hughes (2001) observed that occasionally a community of interest can be defensive. They argued, for example, that a previously ‘hidden’ community of interest might become apparent if an ‘external threat’ became evident. For example, a neighbourhood group protesting against airport expansion could become very active if it became known that the nearby airport was to be expanded. Black and Hughes (2001) noted that these types of communities typically have specific aims and a supporting life cycle.

Alternatively, Blaug et al. (2006) noted that there are other groups which remain hidden because there is no motivating factor or threat, or because they lack the opportunity to be mobilised. Blaug et al. (2006) cited single mothers and carers as examples. They maintained that while single mothers, or carers, may benefit from participating in a community of interest, they may be unable to initiate the creation of the community or have the mechanisms to support it once it has been formed. Smith (1996) argued that the poor are less able to maintain support networks than the affluent and hypothesised that social participation is denied when poverty or social exclusion is present. He cited ‘the absence of community’ as a ‘compounding factor’ in deprivation. This raises questions such as, what constitutes full social participation within contemporary society and what are the benefits obtained from, and barriers to, full participation?

2.5 ONLINE COMMUNITIES

While it may no longer be unusual for people to socialise beyond the boundaries of their local neighbourhoods, a point of debate is whether or not online communities, or virtual communities, are ‘real’ communities? Traditionalists such as Robert Putnam maintained the view that online contacts are notably inferior to person-to-person contacts. Others such as Rheingold (1993) and Wellman (2001) argued vehemently that online communities are real communities and suggest that anyone who subscribes to a different view has mistaken the traditional ‘pastoralist myth’ of community for reality (Wellman and Gulia 1999).
The concept of ‘virtual communities’ was initially popularised by Howard Rheingold in his book *The Virtual Community*. Rheingold (1993 p. 5) described virtual communities as ‘social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.’ It has been argued that, over time, the traditional notion of community has been redefined to include online communities (Wellman 1997).

It has been claimed that virtual communities allow individuals to create a unique set of interpersonal ties which are able to ‘travel with them ethereally’ (Wellman 2001; Katz 1999). It has also been claimed that these ‘virtual convoys’ have the potential to provide each individual with a social network, support and information (Wellman, Carrington, & Hall 1988; Katz 1999; Wellman 2001; Quan-Haase & Wellman 2004).

While it could be argued that the dynamic nature of communities ensures that any delineations may, over time, be hard to maintain, a review of the literature resulted in five online community types being identified based on their ‘raison d’être’: communities of place, communities of interest, communities of purpose, communities of circumstance and communities of practice.

Firstly, ‘communities of place’ were identified, as online communities in which members share a common physical location such as a neighbourhood or region (Black & Hughes, 2001). ‘Communities of place’ can exist totally offline, totally online or they can serve as a complement to face-to-face interactions. Online communities of place are typically formed to complement the offline local community.

Secondly, ‘communities of interest’ were identified as communities in which members share a common personal interest. However, the participants may not have any particular goal, aside from their desire to share a common interest (Wenger 2004). Black & Hughes (2001) argued that typical communities of interest include youth clubs, sports clubs or communities formed around gender, religion or ethnicity. While it is likely that the first ‘communities of interest’ were formed within communities of location, the uptake of information, new communication technologies, increased
mobility and the passing of time have resulted in them becoming increasingly divergent (Blaug et al. 2006).

Thirdly, ‘communities of purpose’ were identified as communities that focus on a particular issue, such as women’s rights or global warming. Membership is typically interdisciplinary and, rather than sharing expertise, the interactions of members are focused on achieving a specific goal (Wenger 1999).

Fourthly, ‘communities of circumstance’ were identified as communities in which members share a position, circumstance or life experience, such as a disability or a personal loss, rather than a profession or interest (Cummings, Heeks & Huysman 2003). Membership is typically made up of individuals with a particular illness, condition or experience that connects them.

Finally, ‘communities of practice’ were identified as groups of people who are enthusiastic about a particular area, or domain, and who interact to share and learn more about their area of interest (Wenger, 2004). It has been argued that ‘communities of practice’ have three key characteristics. Firstly, members share a real commitment to the domain, which implies shared competence. Secondly, a desire to learn from each other underpins the interactions. As a consequence, they build relationships and engage in shared activities (Wenger 2004). Finally, group members are practitioners with a combined repertoire of resources, experiences and perspectives (Wenger 2004). By way of example, Wenger (2004) noted that, although painting is normally an individual pursuit, a particular school of artists might participate in ‘communities of practice’ as they meet to discuss the particular style of painting that they are creating. Highlighting diversity across the spectrum, he also flagged that street gangs may be communities of practice. He observed that the ‘raison d'être’ of both groups is for members to learn from each other and to share their own knowledge and practices (Wenger 1999). Snyder, Wenger and Briggs (2004) suggested that communities of practice essentially operate as ‘social learning systems’. Communities of practice can also exist totally offline, totally online or as complements to face-to-face interactions.
While, at first glance, communities of interest and communities of purpose can appear to be very similar to communities of practice, Wenger (2004) observed that the participation of practitioners within ‘communities of practice’ is a most significant point of difference. Snyder, Wenger and Briggs (2004, p. 8) also argued that communities of practice have the potential to generate social capital through a shared commitment, ‘that enables new levels of collaboration and coordination; for building and sharing collective knowledge, and for developing members skills.’ They added that the effectiveness of a ‘community of practice’ depends on several informal elements, known as ‘structural dimensions’ (Snyder, Wenger & Briggs 2004). ‘Structural dimensions’ include how strongly members identify with the area of interest; the sense of community as indicated by the ‘levels of trust, sense of belonging and reciprocity’ between members; the ‘repertoire of tools’, methods and skills – as well as members’ learning and innovation activities.

2.6 CHAPTER CONCLUSION

This chapter traced the concept of community from its origins in the 19th century through to contemporary interpretations.

Most notably, it was argued that the body of literature suggests that while traditional communities were localised and densely-knit (Wellman 2001), contemporary communities are not necessarily limited by geographical boundaries. Over time, community structures, practices, attitudes and communication patterns have changed (Wellman 1997; Quan-Haase & Wellman 2004). Social constructs have been transformed and it is no longer unusual for individuals to obtain support, companionship, information and a sense of belonging from those who do not live within the same neighbourhood or even within the same metropolitan area (Wellman 2001).

The chapter concludes with the revelation that the increasing popularity of the internet has facilitated a broadening of the notion of community, to include virtual communities (Wellman 1997). The next chapter will further explore the interrelationship between the individual, the internet and the notion of community.
CHAPTER 3

THE INTERNET

3.1 CHAPTER OVERVIEW

The chapter commences by providing a brief overview of the origins of the internet. The internet is described as a system that has been scalable and decentralised since its inception, and the point is made that it is these key elements that underpin the success of the system. It is also argued that, within a contemporary context, the pervasive nature of the internet and the accompanying information explosion has meant that the ability to successfully engage online is now more important than ever before.

The focus next shifts to considering why the internet has become such a compelling force and the sources of its power. Most notably, it is argued that the internet has an inherent power, called the ‘network effect’, that is derived from its topology (Anderson 2007). It is also noted that now, more than ever before, individuals have the ability to create as much as they consume. It is also noted that there are underlying tensions and contradictions associated with the uptake of the internet. One tension highlighted lies between the notion of community as an experience of togetherness and the competing demands within an individuals’ modern lifestyle. Another tension lies between the notion of community as a group experience and the reality that connecting online is usually an individual experience (Wenger et al. 2005).

Next, the Web 2.0 environment is described and, within that context, social networking sites are highlighted.

Finally, the point is made that, while the popularity of the internet has broadened communication options and changed the way that people interact, there has been little empirical research focused on the factors that influence the success of online communities. This research seeks to address that omission.
3.2 BACKGROUND

In the late 1960s, the U.S. Department of Defence funded its Advanced Research Projects Agency (ARPA) to investigate ways of interconnecting computers across incompatible networks. By 1982 a prototype linking military sites and a small number of academic and industrial search sites was successfully developed. The prototype became known as the ‘Internet’ (Comer 1995). From its inception it has been scalable and decentralised (Wellman & Hogan 2004). It has also been an open system that has enabled computers from previously incompatible networks to connect to each other. Over time, the Internet has evolved from a small experimental research project into the world’s largest computer network (Comer 1995).

However, while the creation and uptake of the internet has been described as one of the ‘greatest transforming events in human history’ (Plant 2004, p. 53), it has also been accompanied by criticism. While the most avid supporters, or ‘utopians’, see the internet as a ‘technological marvel transforming the world’, the most passionate critics, or ‘dystopians’ describe it as ‘the destroyer of identity and community’ (Wellman 2004, p. 26). Moreover, while some express fears that internet use inevitably leads to disengagement from mainstream society, others argue that it encourages addictions to online activities, such as online gambling (King & Barak 1999). At the very least, it could be argued that critics believe that internet users form online relationships at the expense of face-to-face relationships (Nie & Hillygus 2002).

Although, at first glance, utopians and dystopians appear to be grounded at opposite ends of a spectrum, it has been suggested that they share several commonalities. Wellman (2004, p. 27), for instance, described the technological determinism of both schools of thought as being both ‘presentist’ and ‘parochial’. He considered them to be ‘presentist’ because they reflect a view that the world began with the internet and ‘parochial’ because they assume that ‘only things that happened on the internet are relevant to understanding it.’ Contending that the two schools of thought base their arguments largely on supposition and anecdotal evidence, Wellman (2004) argued that both portray the internet as a separate social system with the power to either entice people into online communities or away from face-to-face interactions. He added that
both also believed that ‘the sheer introduction of a technology would inevitably change social relations and thoroughly remake societies’ (Wellman 2004, p. 27).

Over time, there have been many opportunities to either challenge or transform social constructs, as the convergence of internet and mobile technologies and the availability of low cost computing options have enabled individuals to connect to others in more ways than ever before. Within a contemporary context, internet use has become integrated into the routine practices of people’s everyday lives. In 2006 nearly two thirds (63%) of Australian households reportedly had access to the internet. The distribution across the population appears to be linked to income, education and age. Households with an income of $2,000 or more per week, for instance, were three times more likely to have broadband than households on less than $600 per week (Australian Bureau of Statistics (ABS) 2007). Cost was identified as being the major barrier for uptake among those in the lower income brackets (ABS 2007). With respect to education, individuals with postgraduate degrees were 83% more likely to have Broadband access than those with no post school qualifications. In addition families with children less than 15 years of age were identified as being most likely to be connected (ABS 2007). The uptake within this sector may be attributed to the perceived value of the internet as an educational or informational resource. With respect to age, individuals under 24 years of age were identified as being most likely to have Broadband access while individuals over 65 years of age were identified as being least likely to have access (ABS 2007). The next section of this thesis considers why the internet has become so compelling.

3.3 THE POWER OF THE INTERNET

Within a contemporary context, the ability to successfully engage online is now more important than ever. Individuals can use a range of online applications such as twitter, blogs, wikis or social networking sites to connect to others, express themselves, build their reputation or make money by creating online content (Organisation for Economic Co-operation and Development (OECD) 2007). It has been argued that successful engagement with new technologies is becoming central to full participation in the economic, social, political and cultural realms of society (McLaren & Zappalà 2002). While Quan-Haase and Wellman (2004) argued that the changes to the way people
interact is a natural consequence of the evolution of communication, Anderson (2007) attributed the changes to the ‘power’ of the internet.

Most notably, Anderson (2007) argued that the internet has an inherent power, called the ‘network effect’, which is derived from its topology (Anderson 2007). The ‘network effect’ is an economic term that describes ‘the increase in value to the existing users of a service in which there is some form of interaction with others, as more and more people start to use it’ (Anderson 2007, p 20). The underlying premise is that the larger the membership of a social networking site such as Facebook (http://www.facebook.com) or Yahoo Groups (http://au.groups.yahoo.com), the more likely it is that the application will support a range of social systems, within which a variety of norms, values and understandings will operate. As such, it will be increasingly likely that members will be able to access, or form associations based on, their own personal beliefs and values. It follows that as membership increases, so does the incentive for non-members to join (Farrell & Klemperer 2007).

For others the source of the internet’s power is derived from its role as an enabler, as it provides the tools that enable individuals to satisfy their need for interaction, social connectedness and knowledge (Plant 2004). The internet enables individuals to stay connected with friends and acquaintances, or to engage more fully with society, regardless of time, location or personal circumstance (Wenger et al. 2005). Individuals can also use the internet to extend their social networks, work collaboratively with others to achieve common goals, publish content, access user-generated content and achieve much more. Moreover, the internet provides individuals with opportunities to create very personalised, flexible communities, with unique sets of ties that have the potential to support their social and information needs, as well as provide them with a sense of belonging (Wellman 2001; Quan-Haase & Wellman 2004).

For others, the internet is compelling because now, more than ever before, individuals have the ability to create as much as they consume (Anderson 2007). The Organisation for Economic Co-operation and Development (2007, p. 17) described the trend for users to create content as the ‘rise of the amateur creators’. While noting that there is no generally accepted definition, the OECD (2007, p. 9) described user-created content as
content that is ‘made publicly available over the internet, which reflects a certain amount of creative effort, and which is created outside of professional routines and practices.’ It has been argued that the trend towards a more participatory web is becoming an increasingly significant influence over many aspects of economic and social organisation (OECD 2007). For instance, the popularity of user-created content is fuelling a shift away from more traditional content suppliers and, in response, traditional media organisations are shifting their focus from creating and publishing content to establishing applications and frameworks that capture and publish user created content (OECD 2007).

### 3.4 TENSIONS AND CONTRADICTIONS OF THE INTERNET

While the internet has inherent power, there are also underlying tensions and contradictions associated with its use. This section explores those tensions and contradictions.

One tension revolves around online communication choices that can impact significantly on individual interactions and community experiences. Electing to use real time communications, such as online chat, for instance, requires individuals to respond, in turn, just as face-to-face conversations require individuals to respond in real time (Long & Baecker, 1997). The applications do not make allowances for extended delays. Electing to use non-real time communications, such as email, wikis, blogs and discussion boards, on the other hand, allows for delays. Long and Baecker (1997) argued that, by definition, non-real time communications provide individuals with the opportunity to spend extended periods of time on each communication before they are sent. As a consequence, individual interactions and community experiences may be affected. They posited that the ability to edit, for instance, may result in the creator appearing to be more intelligent or articulate than they would be during face-to-face interactions (Long & Baecker 1997). Building on the notion that communication choices can impact on online experiences, Wenger et al. (2005) developed a taxonomy that classified a range of online tools and activities according to whether or not they relied on individual participation or cultivated a sense of community. They concluded that real time interactions generally cultivated a sense of community, while non-real time interactions generally relied on individual participation.
Another tension lies between the notion of community and the demands of modern lifestyles. Wenger et al. (2005), for instance, argued that the physical separations brought about by the demands of modern lifestyles are at odds with the sense of community togetherness that naturally arises as members participate in regular community activities. They argued that a key role of new technologies, such as the internet, is to enable a sense of ‘community togetherness’ to be maintained regardless of time and location (Wenger et al. 2005).

Similarly, there are contradictions inherent in the relationship between communities and individuals. Wenger et al. (2005) argued, for instance, that while a sense of togetherness is an essential element of community life, it is created and experienced by individual members. It follows that while communities may use online tools to maintain a sense of ‘togetherness’, individuals connecting to the communities are having an individual experience. On this basis Wenger et al. (2005) cautioned against confusing the individual experience with the community experience. Furthermore, Wellman (2001) argued that as individuals gravitate towards networks that are more spatially dispersed, their relationships will become more narrowly defined. As such, person-to-person interactions will dominate and it will be the individual, not the group that will become the primary unit of connectivity (Wellman 1997; Quan-Haase & Wellman 2004; Wellman 2001.). As individuals become more self-defined and relationships become more compartmentalised, a kind of networked individualism will emerge as the new norm (Wellman 2001; Anderson 2007). Within that context it is anticipated that individuals, operating independently, will cooperate with others primarily to harness the power of the collective for their own purposes.

There are also contradictions around access and control. While the notion of control is not generally associated with internet-based applications, Wellman (1997) observed that online social networking applications make it relatively easy for individuals to maintain a level of social control over an online community through the construction of personal networks with closed, partially closed or fully open access to non-members. He also noted that most applications include tools that make it possible for group creators to regulate member access to application features. However, while there are levels of access and control at the point of group creation, there are minimal controls in place at
the point of application development. Moreover, over time, there has been a definite shift away from developing purpose-built, free-standing applications towards utilising open source, general purpose applications (Wenger et al. 2005). Kaplan and Haenlein (2010) linked the changed approach to development to the popularity of Web 2.0, describing it as ‘a platform whereby content and applications are no longer created and published by individuals, but are instead are continuously modified by all users in a participatory and collaborative fashion’ (Kaplan & Haenlein 2010, p 61). Social networking sites, such as Facebook, have capitalised on the phenomenon by evolving into ‘platforms’ that can be used by would-be developers. While some may question the quality of much of the development work, an open, collaborative environment that utilises simplified programming models has made it very easy for individuals to contribute to application development (Anderson 2007). In addition, a trend towards the adoption of bridging logic’ inherent in open application program interfaces (APIs) has enabled previously incompatible modules to be seamlessly integrated within a range of applications (Wenger et al. 2005). It has been argued that these trends, combined with ongoing development and a commitment to collaboration, are changing the Web and how it works (Lai & Turban 2008).

At the same time, the ability to control access to data is becoming recognised as a greater source of power than the data itself (Anderson 2007). As such, while it is generally acknowledged that a commitment to open standards is a driving force behind the development of Web 2.0 applications, there is a growing trend for commercial organisations to capture and sell access to aggregated data. There is also a growing trend for companies to make data available in new ways, for example, through repurposing or by applying filters (Lai & Turban 2008). There is an inherent tension in the relationship between user creation and organisational control. Most notably, the tension raises questions about content ownership, remuneration, copyright, intellectual property rights and privacy.

There is also a need to preserve content for future generations. However, there is an inherent tension between the ephemeral nature of online content and traditional archival and content collection methods. Moreover, the volume of online content and the exceptionally dynamic nature of the internet presents a huge challenge. Anderson
(2007) argued that traditional archivists and collectors would be best suited to contribute towards the resolution of the issue.

3.5 WEB 2.0 AND SOCIAL NETWORKING

The creation and subsequent popularisation of the term Web 2.0 has been attributed to Dale Dougherty and O’Reilly Media Inc. (Madden & Fox 2006). It has been argued that the term was created in 2004, to attribute a sense of importance and continued relevance of the Web following the dot.com crashes (Anderson 2007). Sir Tim Berner-Lee, the creator of the World Wide Web, criticised the use of the term because he understood Web 2.0 to be nothing more than a more fully implemented version of the original web. In support of his view he reportedly argued that Web 2.0 is based on Web 1.0 standards, and that at the core of both Web 1.0 and Web 2.0 are people-to-people connections (Anderson 2007).

However, while it is generally accepted that many of the ideals of Web 2.0 have been derived from the traditional web, it is also generally accepted that Web 2.0 has a much more social orientation than Web 1.0. Lai and Turban (2008), for instance, argued that the combination of user-generated content, its collaborative nature and the significant emphasis on social networking sites set Web 2.0 apart from the traditional Web. Rather than being defined with reference to a list of specific applications and services, Web 2.0 is usually described as embodying a set of principles and practices. The associated applications and services usually have defining characteristics that enable users to create online content, access collective intelligence and access network-enabled interactive services (Madden & Fox 2006). At the core of web 2.0 is a sense of participation and ‘collaborations, contributions and communities’ (Anderson 2007, p. 14) and there are a range of sites such as Wikipedia (http://wikipedia.org/), YouTube (http://www.youtube.com/) and Blogger (https://www.blogger.com/) that support Web 2.0 activities such as collaboration, media sharing and blogging. The focus of this thesis, however, is on social networks.

The Pew Internet Project defined online social networks as ‘spaces on the internet where users can create a profile and connect that profile to others (individuals or entities) to create a personal network’ (Lenhart 2009, p. 1). Social networking sites
enable individuals to connect to their friends and colleagues as well as form new associations through participation in online groups. Yahoo! Groups (http://groups.yahoo.com/), for instance, is promoted as a place ‘where people get to know each other and stay informed’. Alternatively, Facebook (http://www.facebook.com/) declares that it is their mission to ‘give people the power to share and make the world more open and connected’. Group members typically have online access to group features such as forum postings, photo albums, shared links and group calendars, as well as individual features such as personal profiles. Plant (2004) argued that memberships of online communities satisfy two basic human needs; the need to be connected to others and the need to acquire knowledge. Supporting this argument, a recently completed study found that individuals seeking health information benefited significantly from tapping into the pool of user-generated information and the emotional support provided within online social networks (Fox & Purcell, 2010).

It has also been argued that social networking sites are well suited to meet information and connection needs because they foster the development of sparse, unbounded networks that encourage the formation of weak ties (Wellman 1997). ‘Sparseness’ refers to the amount of contact members have with each other, while boundedness refers to the percentage of members’ ties that stay within the boundaries of the network. ‘Tie strength’ describes frequency of contact, social closeness, reciprocity and the degree of voluntary involvement (Granovetter 1973; Wellman 1997). Weak ties typically help individuals reach out to various information and resources and are more likely to exist between acquaintances. Within this context, the social aspects of online networking are becoming increasingly important (Anderson 2007). Strong ties, on the other hand, typically provide companionship and emotional support and are most likely to exist between family and close friends. They are founded on considerable trust and support. While it is generally accepted that it is the more traditional communities, such as those described by Tonnies (1887) and Durkheim (1893) that typically foster the development of strong ties, a recent study conducted by the Pew Research Centre found that a high percentage of people surveyed (85%) used online social networking applications to interact with people whom they already knew offline (Lenhart 2009). On that basis, it could be argued that strong ties, as well as weak ties, can be maintained online.
Lai and Turban (2008) argued that online social networking sites have experienced a significant increase in popularity since the emergence of Web 2.0 applications and services. Moreover, the Pew Research Centre reported that the number of American adult internet users who had used a social networking site had quadrupled within the four years, from 2005 (8%) to 2008 (35%) (Lenhart 2009). By way of comparison a relatively small social networking site, My Connected Community (http://mc2.vicnet.net.au/), had 17,049 registered members in 2002 and 81,851 registered members in 2010. Alternatively, one of the more popular social networking sites, MySpace, had more than 100 million registered users in 2006 (OECD 2007) and more than 185 million users in 2010 (http://www.myspace.com/). Another site, Facebook, reportedly had 8,552,591 registered users in May 2010 (http://www.facebook.com/). Even though the number of members may vary, however, most social networking sites have comparable features. Yahoo! (http://au.groups.yahoo.com/) and My Connected Community (http://mc2.vicnet.net.au/), for instance, provides access to forums, photo albums, group event calendars, shared links and member polls. They also allow members to customise their profile pages.

3.6 CHAPTER CONCLUSION

Within this chapter it was argued that the popularity of the internet has broadened communication options and changed the way that people interact. However, even though more and more people are participating online, there has been little empirical research focused on the factors that influence the success of online communities. This research seeks to address that short-coming.

In preparation for the empirical research that will be conducted within this study, the next chapter will further explore the notion of social capital. Most notably it will clarify the interrelationship between social capital and social networks and describe the impact of the uptake of new technologies on social capital.
CHAPTER 4

SOCIAL CAPITAL AND SOCIAL NETWORKS

4.1 CHAPTER OVERVIEW

The term ‘social capital’ is used in a range of policy settings by local, state and national governments. It is also used by international organisations such as the World Bank (Baum 2000). It has been described as a ‘complex, multifaceted and contentious concept’ (Department of Communications Information Technology and the Arts (DCITA) 2005, p. 15).

The aim of this chapter is to explore what social capital is and why it is important. It also seeks to clarify the interrelationship between social capital and social networks for the purposes of this study.

The chapter begins by stressing the importance of social capital and by highlighting two very different conceptual understandings, one emphasising the individual nature of social capital and one emphasising its collective nature. In the process, particular attention is drawn to the work of theorists Pierre Bourdieu, James Coleman and Robert Putnam. The review concludes by acknowledging that there is a growing body of evidence to suggest that the Organisation for Economic Co-operation and Development, (OECD 2001) definition of social capital is emerging as a common basis for international comparability (Australian Bureau of Statistics (ABS) 2004). On this basis, social capital is defined, for the purposes of this study, as ‘networks, together with shared norms, values and understandings that facilitate co-operation within or among groups’ (OECD 2001, p. 41). Underpinning the definition is the notion of trust that gives rise to cooperative behaviours within or among groups.

The focus of the chapter next shifts to the relationship between social capital and social networks. It is reaffirmed that social capital is embedded in social networks. Within this context the internet is portrayed as an enabler and means of access to a range of social groupings. It is argued that the reach of the internet has facilitated a shift away from
social networks operating within public spaces to social networks operating within private spaces, such as homes. The networks are described as being individualised and flexible.

Finally, various approaches to measuring social capital are considered. It is revealed that the most common way to measure levels of social capital is through self-reported levels of trust (OECD 2001). It is noted that self-reported levels of trust are measured within this study.

4.2 THE IMPORTANCE OF SOCIAL CAPITAL

The presence of social capital has been intrinsically linked to positive outcomes across a range of areas, from improved health and greater well-being to better parenting (Glaeser 2001; Putnam 2007). More specifically, the underlying sense of social connectedness has been linked to a reduced risk of Alzheimer’s disease and the associated levels of trust have been linked to lower crime rates and improved government (OECD 2001). Economically, politically and socially the presence of social capital within our society has become increasingly important.

Within the economic sphere there is a strong conviction that the presence of social capital promotes a level of cooperation between individuals that can result in significant economic benefits (Fukuyama 2001; Glaeser 2001). In some instances a level of cooperation may result in reduced transaction costs because there would be no costs associated with the preparation and monitoring of formal contracts (Knack & Keefer 1997). This view of social capital is intrinsically linked to the economic concepts of outputs and profitability (OECD 2001). In other instances, levels of cooperation may result in the sharing of tacit knowledge across regional clusters or the sourcing of jobs through job networks (OECD 2001). These types of positive social relationships are thought to underpin economic development. Looking to the future, Fukuyama (2001) argued that a level of coordination and cooperation based on informal norms is essential to the smooth running of a modern economy. He added that they will become increasingly important as economic activities become more complex, and as technology becomes more sophisticated. Stressing the point, Baum (2000) warned against the blind
acceptance of a view of social capital that did not consider how social capital influenced economic factors.

Within the political sphere the presence of social capital is considered, by some, to be an essential foundation for democracy. This view is underpinned by the belief that the interweaving interactions and associations between individuals which foster social capital can produce a ‘dense civil society’ (Fukuyama 2001). There is also a strong link between civic engagement and the presence of social capital. This view is based on an increasing amount of empirical evidence which suggests that the quality of public life, the performance of social institutions and, more specifically, the performance of crime and drug programs are significantly improved within civically engaged communities (Putnam 1995).

While the body of literature suggests that an abundance of social capital is a good thing, it also needs to be acknowledged that there is an opposing school of thought. This view is grounded in the belief that the presence of too much social capital can foster entrenched views, for example, within pressure groups. It is contended that over time, the entrenched views can lead to distortions and deadlocks across the political landscape (Fukuyama 2001).

Fukuyama (2001) also exposed a much darker dimension to social capital. He suggested, for instance, that, even though a network may work effectively towards a common goal and share strong moral bonds, it may still be a social liability. He posited that the stronger the moral bonds, the less likely the members are able to trust outsiders. He described this as a radius of distrust and argued that the larger the radius of distrust the greater liability the group represents to the surrounding society. Fukuyama (2001) also presented an alternative argument, positing that a narrow radius of trust could also negatively affect the wider society as poor behaviour is exhibited towards non-group members. In support of this view, he noted that within traditional tribes and clans, narrow radii of trust typically resulted in increased solidarity between members but decreased cooperation with outsiders. Alternatively, it has been argued that low levels of social capital could lead to a number of political dysfunctions including inefficient
local government, improper functioning of public institutions and corruption (Fukuyama 2001; Woolcock 2001).

Nevertheless, the body of literature does suggest that the presence of too much social capital within society is better than having too little (Fukuyama 2001) and, not surprisingly, governments seeking even limited success within a modern democracy are keen to foster the creation of social capital. The World Bank (1997), however, suggested that governments would be ill-advised to adopt a ‘top down approach’ on the basis that it has becoming increasingly apparent that ‘government programs work better when they seek the participation of potential users’ and when they take advantage of the community’s pool of social capital rather than ‘work against it’ (World Bank 1997, p.10). In addition, Fukuyama (2001) argued that the identification of existing social capital could be an issue for government, on the basis that social capital is generally considered to be a by-product of factors largely outside the influence of government. He added that even if governments could identify existing forms of social capital, aside from education and enforcing basic common rights, they do not have a magic ‘lever’ that can create more social capital (Fukuyama 2001, p. 17).

The Victorian government’s approach to the creation of social capital focuses on community development. On particular document, ‘A vision for Victoria to 2010 and beyond: growing Victoria together,’ outlines the Victorian government’s priorities for Victoria. It highlights the ‘government’s commitment to working closely with communities’ on a range of community-based projects. It also stresses the importance of social considerations, as well as economic and environmental considerations (Dept. of Premier and Cabinet 2005). A more recent document, ‘A Fairer Victoria 2010: Real support – real gains,’ provides a framework for assisting disadvantaged Victorians. It highlights the importance of having social capital for all Victorians, including the most disadvantaged. It also stresses the importance of social connectedness and highlights the considerable benefits of having socially inclusive programs, from lower crime levels to longer life expectancy (Dept. of Premier and Cabinet 2010).

With the importance of social capital well-established, the next section of this thesis considers the notion of social capital.
4.3 THE NOTION OF SOCIAL CAPITAL

This section highlights two very different understandings of social capital. The first understanding emphasises the individual nature of social capital. Put simply, social capital is described as being ‘not what you know but who you know’ (Woolcock 2001, p. 67). The second understanding emphasises the collective nature of social capital. Social capital is described as being ‘the glue that holds communities and other social networks together’ (Preece 2002, p. 37).

Pierre Bourdieu, a French sociologist, was one of the first people to highlight the individual nature of social capital. He argued that individuals deliberately construct, cultivate and participate in social networks to create social capital. With this in mind, he defined social capital as the ‘aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition’ (Bourdieu 1985, p. 51). He also posited that the amount of social capital that an individual possesses at any point in time can be determined by the number and quality of the connections that they can activate, as well as the amount of economic, cultural and symbolic capital that they possess (Bourdieu 1985). While economic capital typically assumes the form of either cash or property rights, he argued that cultural capital can assume three states. The first state is embodied within an individual’s state of mind, for example, by virtue of their knowledge. The second state is institutionalised in the form of an individual’s educational qualifications. The third state is objectified in the form of cultural goods such as works of art. Bourdieu (1985) viewed symbolic capital as a source of power, typically derived from an individual’s association with an elite group, by virtue of their social position or their relationship to someone who has a notable social position.

Like Bourdieu (1985), James Coleman’s (1988) understanding of social capital highlighted the individual nature of social capital. Unlike Bourdieu (1985), however, Coleman (1988) did not define social capital as a single entity but as ‘a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors - whether persons or corporate actors - within the structure’ (Coleman 1988, p. S98). Coleman (1988) further categorised social capital along the following functional lines: firstly, by obligations and
expectations that are dependent on trust; secondly, by information flows that are dependent on the capacity of the social structure; and thirdly, by social norms that are accompanied by sanctions. Coleman (1988) also shifted the focus from elite classes within society, to family and community settings.

Coleman (1988) posited that individuals, motivated by their own personal interests, could use a range of resources at their disposal, including social capital, in a range of ways to achieve a range of outcomes, both positive and negative. By way of example, he used empirical evidence to link a lack of social capital within a student’s family and community to higher drop-out rates before graduation. In doing so he also demonstrated that the concept could be used for research purposes (Baron, Field & Schuller 2002).

Conveying a very different perspective, Robert Putnam emphasised the collective nature of social capital. He posited that ‘life is easier in a community blessed with a substantial stock of social capital’ (Putnam 1995, p. 67). Positioning social capital firmly within social networks, Putnam (1995) argued that there is a strong link between civic engagement and the presence of social capital. He described social capital as an aspect ‘of social organization such as networks, norms and social trust that facilitates coordination and cooperation for mutual benefit’ (Putnam 1995, p. 67). Underpinning his conceptual understanding was the belief that social networks engender norms of reciprocity and social trust, encourage communication, facilitate the solution of collective issues and foster a collective identity (Putnam 1995).

Robert Putnam was also credited with popularising the notion of social capital through his published work, *Bowling Alone* (Portes 1998). The work was based on the findings of an empirical study that examined levels of civic engagement and social connectedness within contemporary America (Putnam 1995). The longitudinal study spanned twenty years and its findings sparked much debate. His initial central premise was that social connections and civic engagement are a pervasive influence in our public and private lives. Putnam (1995) later concluded, however, that over time, a decreasing number of Americans were civically engaged or were members of community-based organisations (for example Boy Scouts or Red Cross). He linked the decrease in participation to the erosion of social capital.
While Putnam (1995) lamented the dramatic decrease in the number of social networks that operated within public contexts, Wellman (2001) pointed to a significant increase in the number of individualised and flexible online social networks that operated from private homes. He speculated that ‘cyberspace’ had become a new form of public space (Wellman 1999). Stressing his view that society had never been better connected, Wellman (2001) described the internet as the largest and most fully connected social network that the world has seen to date.

As well as highlighting both natures of social capital, the individual and the collective, the literature review also revealed a lack of consensus regarding the relationship between social capital and trust. Woolcock (2001), for instance, objected to Putnam (1995) incorporating trust into his definition of social capital on the basis that trust is an indicator of social capital, not a source of social capital. Woolcock (2001) maintained that definitions of social capital should focus on sources of social capital rather than indicators or consequences of social capital. By way of example, he noted that an education program may be a source of social capital but a good exam result could be a consequence and an indicator of social capital. Along similar lines, Portes (1998, p. 5) criticised Coleman’s (1988) ‘vague definition’ for encouraging discussion and the formation of definitions that confuse social capital with the sources of social capital and the possessors of social capital. Portes (1998, p. 2) posited that ‘the point is approaching at which social capital comes to be applied to so many events and in so many different contexts as to lose any distinct meaning.’

The core of the problem, as Patulny (2004, p. 2) expressed it, is that there is a general lack of agreement over whether social capital is ‘a value held, such as trust’, or ‘a network that facilitates action, such as a voluntary association.’ He added that the more contemporary definitions incorporate both perspectives and pointed to the official OECD definition as a good example of a definition that consolidates both aspects well. The OECD (2001) defined social capital as ‘networks, norms, values and understandings that facilitate co-operation within or among groups’ (OECD p. 41).

Espousing a very similar point of view, Fukuyama (2002) described social capital as ‘shared norms or values that promote social cooperation, instantiated in actual social
relationships’ (p. 27). An earlier work of Fukuyama’s (2001) provided an insight into what he meant by ‘shared norms’ when he described them as relating to traditional virtues such as honesty, reciprocity and respecting obligations. He added that while the norms could vary in complexity, they had to lead to cooperative behaviours. He posited that social capital ‘is what permits individuals to band together to defend their interests and organize to support collective need’ (Fukuyama 2002, p. 26). Articulating what is essentially an anthropological viewpoint, Fukuyama (2001) posited that humans have natural instincts to seek out the company of others and, by way of example, he noted that nearly all traditional forms of culture, such as tribes and clans, were based on shared norms to achieve co-operative ends.

Underpinning the definitions put forward by Fukuyama (2002) and the OECD (2001) is the notion of trust that gives rise to cooperative behaviours within or among groups. However, while the two definitions are remarkably similar, there is a growing body of evidence to suggest that the OECD’s (2001) definition is emerging as a common basis for international comparability (ABS 2004). For this reason, it is the OECD definition that will be adopted for the purposes of this study.

The next section of this thesis explores the relationship between social capital and social networks. It also provides an insight into the various dimensions of social networks.

**4.4 THE RELATIONSHIP BETWEEN SOCIAL CAPITAL AND SOCIAL NETWORKS**

Social networks have been described as being ‘an interconnected group of people who usually have an attribute in common’ (Productivity Commission 2003, p. 10). They have also been described as groups of people connected by socially meaningful relationships (Wellman 1997). Modern society has been described as a large number of overlapping social networks, with many being totally virtual and many allowing multiple memberships and identities (Fukuyama 2001).

Many theorists argue that social capital is embedded within social networks (Bourdieu 1985; Portes 1998; Putnam 1995; Wellman 1996; Woolcock 2001). It has also been
argued that social networks can foster bridging, bonding or linking social capital (Granovetter 1973; Woolcock 2001).

Bonding social capital is most likely to be present within groups that are homogeneous, such as family groupings and groups based on ethnicity (OECD 2001). Patulny (2004) noted that it is the familiarities between, and the similarities of, members that strengthen the social bonds between them. Bonding networks notably provide members with a sense of belonging and social support. They have been described as essentially closed networks within which trust and reciprocity are integral components (Stone 2001; Patulny 2004). This conceptual understanding of bonding networks closely aligns with the traditional idea of community as presented by Tonnies (1887) and Durkheim (1893).

While bonding social capital has been described as being good for ‘getting by in life on a daily basis,’ bridging capital has been described as being good for ‘getting ahead’ (Stone 2001, p. 16). Bridging networks cultivate a broader sense of community and, in doing so, provide members with access to a wider range of resources than they would normally be able to access (Stone 2001; Patulny 2004). Bridging social capital is most likely to be present between groups that are different, such as distant friends and colleagues (OECD 2001).

Linking social capital, on the other hand, is most likely to be present between individuals and groups belonging to different social positions within society. A key function of linking social capital is to ‘leverage resources, ideas and information from formal institutions beyond the local community’ (Woolcock 2001). As such, these networks have the potential to provide individuals with access to wealth, status and power. This conceptual understanding of linking networks complements Bourdieu’s (1985) notion of social capital.

The literature further delineates social networks according to whether they are either formal or informal (Stone 2001). Informal networks typically include family, friends and neighbours. Formal networks typically refer to organised groups that require formal membership, such as sporting associations. Reinforcing the concept that different types of networks may have different outcomes, Putnam (2007) posited that while a
friendship group, for example, may have a positive impact on member health, a more formal network, such as a civic group, may promote democracy.

In addition, social networks have been described as being either horizontal or vertical (Putnam 1995; Stone 2001). Vertical networks, such as the Mafia and the Ku Klux Klan, are typically based on dependencies. Horizontal networks, on the other hand, are typically voluntary organisations within which members notionally have equal status and power and a sense of solidarity. Putnam (1995) maintained that horizontal networks are much more important than vertical networks because they are more likely to promote social capital. He also noted that contemporary society has been formed around relationships that reflect solidarity (horizontal bonds), rather than relationships that reflect dependencies (vertical bonds).

4.5 MEASURING SOCIAL CAPITAL

It has been well established within this thesis that the presence of social capital within society is important (Glaeser 2001; Putnam 2007; OECD 2001). It follows that the ability to measure its presence is also important. This section considers various approaches to measurement.

One approach considered by Fukuyama (2001) entails measuring social capital through a census of groups and group memberships in a given society. This approach was undertaken by Putnam (1995), who attempted to measure the size of group memberships in clubs, such as sports clubs and bowling clubs, within the United States. It was an enormous task that was implemented across several regions using a range of censuses and surveys. Within the Yankee City study, alone, Putnam (1995) counted approximately 22,000 different groups within a community of 17,000 people. Despite such attempts Fukuyama (2001) argued that it is almost impossible to produce a complete census that registers all current informal networks and cliques.

Alternatively, another approach measures collective action (or internal cohesiveness) (Fukuyama 2001). If this qualitative approach is adopted, each measure of effectiveness would have to be determined subjectively by an outside observer. The observer would have to document the type of activities normally undertaken by the group and then
observe group cohesion while the group is under stress. While at first glance this method looks plausible, it would be difficult to implement successfully on the basis that it would be difficult to reach agreement on a suitable measure, given that collective action can vary so much across groups.

Stone (2001, p. 2) posited that the difficulty with measuring social capital may stem from the ‘ad hoc’ way it has been defined across the corpus. More specifically, the problem seems to centre on the confusion about what the sources and outcomes of social capital are and what social capital actually is (Patulny 2004; Stone 2001). Stone (2001) and Woolcock (2001) noted that research focused on social capital often inappropriately measures the outcomes of social capital as an indicator of social capital. Stressing the point, Stone (2001) added that there is a significant difference between measuring a norm of trust, by assessing the extent of trust within a particular group, and measuring behavioural outcomes of that norm.

Adopting a very different view, Glaeser (2001, p. 2) vehemently argued that, from the very beginning of social capital research, ‘the social sciences’ approach to social capital has ‘sabotaged attempts to understand its causes.’ He maintained that there should be a shift away from measuring the presence of social capital to investigating what causes social capital. He also argued that the research should shift its focus from groups to individuals, on the basis that it is individuals who form social capital.

While a review of the corpus revealed various approaches to measuring social capital, the most common approach is reportedly based on self-reported levels of trust (OECD 2001). Furthermore, it is generally accepted that trust is either an element of social capital or an indicator of the presence of social capital (Woolcock 2001; Fukuyama 2001; Preece 2002). For these reasons, self-reported levels of trust are measured within this study.

4.6 CHAPTER CONCLUSION

This chapter stressed the importance of the presence of social capital. It also attributed a range of positive outcomes across society to the presence of social capital. Social capital was described as being intrinsically linked to social networks.
With the importance of social capital highlighted, and the link between online social networks and social capital established, the next part of this thesis will draw on the work of DeLone and McLean (1992), Seddon (1997) and Lin (2008) and others, in the quest to find a model that provides a suitable framework for examining the interrelationships between the factors that influence the success of online communities.
PART III: CONCEPTUAL MODEL AND METHODOLOGY

Chapter 5: Conceptual model and hypotheses
Chapter 6: Measurement development
Chapter 7: Research methodology
CHAPTER 5

CONCEPTUAL MODEL AND HYPOTHESES

5.1 CHAPTER OVERVIEW

The literature review established that social connectedness is becoming increasingly important at an individual level and at a societal level (Organisation for Economic Co-operation and Development (OECD 2001). In addition, the convergence of the internet and of social networks has made it possible for a sense of community togetherness to be maintained regardless of time and space. To date, however, very few studies have examined the interrelationships between technical and social factors when considering online community success.

This thesis addresses the deficiency by testing a model that integrates both technical and social constructs. The model, identified as the ‘modified virtual community success model,’ is examined within this chapter. It is noted that elements of the model have been derived from the DeLone and McLean IS Success model (DeLone & McLean, 1992), the respecified version of DeLone and McLean (1992) IS Success Model (Seddon 1997) and the virtual community success model (Lin 2008).

It is argued that the modified virtual community success model provides a suitable framework for empirically examining the interrelationships between the factors that influence online community success. On this basis, it is proposed that a set of hypotheses based on the assumed interrelationships between the constructs be tested. The findings will provide an insight into how the constructs interrelate empirically and, as such, will form a basis for discussion, analysis and comparison by future researchers. In the process, the appropriateness of the model will be tested.

5.2 BACKGROUND

Over time, researchers have written a great deal about the various measures of information system (IS) success. The sheer volume and variation across the corpus has
the potential to create confusion about which might be the best constructs to measure IS success. In an effort to make sense of the corpus, DeLone and McLean (1992) analysed 100 papers containing information systems effectiveness measures that were published during the years 1981 – 1987. They then consolidated the research into a coherent body of knowledge. As a result of their efforts, they have been acknowledged as the first researchers to provide a level of order to the corpus (Seddon 1997).

DeLone and McLean (2003) held the view that, despite the multifaceted and conditional nature of information system success, a more controlled number of measures would make it easier for future researchers to compare results. Most relevant to this thesis is the fact that DeLone and McLean (1992) were able to significantly reduce the number of different measures used by researchers to determine IS success. They classified the range of information system success measures into six categories and depicted causal relationships between the categories. The resultant model is reproduced in Figure 5.1: DeLone and McLean IS Success Model (DeLone & McLean 1992).

**Figure 5.1: DeLone and McLean IS Success Model (DeLone & McLean 1992)**

`Systems Quality,' as shown in Figure 5.1 measures technical success (DeLone & McLean 2003). DeLone and McLean (2003) defined technical success in terms of the accuracy and effectiveness of the communication system that produces information.

`Information Quality,' as shown in Figure 5.1, measures semantic success. DeLone and McLean (2003) described semantic success as the success of the information in conveying the intended meaning.

DeLone and McLean (1992) suggested that, when attempting to determine IS success, future researchers should use the model as a guide and systematically combine the measures.

Building on the work of DeLone and McLean (1992), Seddon and Kiew (1996) scrutinised the key constructs and the relationships between them. Their findings supported the inclusion of system quality, information quality and user satisfaction in a structural model measuring IS success. Their findings also highlighted the importance of perceived usefulness as an IS measure.

Seddon et al. (1998) reportedly analysed 186 empirical papers containing information systems effectiveness measures that were published during the years 1988 – 1996. Although they found considerable diversity across the corpus, they did not see the diversity as a problem. Unlike DeLone and McLean (2003), Seddon et al. (1998) expressed the view that in light of the variety of systems available and the various human interests, a range of information system effectiveness measures are needed for different purposes.

Following on from the work of Seddon and Kiew (1996), Seddon (1997) developed an alternative model to measure IS success. The respecified version of the DeLone and McLean (1992) IS Success Model (Seddon 1997) is shown in Figure 5.2.

Seddon (1997) posited that the key purpose of the redesign was to provide a ‘clearer, more theoretically sound conceptualisation of the relationships’ between the various information system success constructs identified by DeLone and McLean (1992). Seddon (1997) also speculated that the respecified model would better reflect the multidimensional and the interdependent nature of the construct, as well as inform
future researchers as they seek to select an appropriate mix of information system success measures.

Figure 5.2: Respecified version of DeLone and McLean (1992) IS Success Model (Seddon 1997)

While Seddon (1997) agreed with many of the interrelationships depicted within DeLone and McLean’s structural model, he also voiced some concerns.

Most relevant to this thesis is his concern that the DeLone and McLean IS Success Model did not acknowledge the fact that different individuals ‘may validly come to different conclusions about the success of the same information system’ (Seddon 1997). As a result, Seddon’s (1997) respecified model specifically conceptualises information system success as a value judgement made by an individual, from the stakeholder point of view. He argued that the observer ‘makes judgements about the various aspects of
what he, or she, regards as system success’ and without an understanding of that point of view it is not appropriate to speculate about the relationships between IS use and IS success (Seddon 1997).

Seddon (1997) also expressed concern that two different models, a process model and a variance model, were combined within DeLone and McLean’s (1992) IS Success Model. In particular, Seddon (1997) was concerned that the combination of the two different models within one structural model may present a confusing mix of ‘process and casual explanations for IS success’ (Rai, Lang & Welker, 2002). His main points of contention were that, on one hand, a process model infers a sequence of events, which are necessary, but not sufficient, to cause certain outcomes, while on the other hand, a variance model, infers that ‘if all other things are equal, a variation in any one of the independent variables is necessary and sufficient to cause variance in the dependant variables’ (Seddon 1997). In an effort to provide a clearer alternative, Seddon (1997) embedded two variance models within the respecified model.

The first variance model, identified by Seddon (1997) as the ‘Partial behavioral model of IS use,’ is shown within a large rounded box at the top left of Figure 5.2. The second variance model, identified as the ‘IS success model’, is shown within the large rectangle at the bottom of Figure 5.2. The two variance models are linked by a solid line arrow flowing from ‘IS Use’ to ‘Individual, organizational and societal consequences of IS use’ and a dotted line arrow flowing from ‘Individual, organizational and societal consequences of IS use’ to the ‘IS success model.’ Finally, the ‘IS success model’ is linked via the solid line arrow representing ‘Feedback’ up to ‘Expectations about the net benefits of future use’ within the ‘Partial behavioural model of IS use’.

The arrows depict the relationships and directional flow of information between the dimensions. Seddon (1997) argued that the solid arrows indicate independent (necessary and sufficient) causality. The dotted line from ‘Individual, organizational and societal consequences of IS use’ to the ‘IS success model’ indicates that there is no clear causal relationship between the two.
Within the context of this thesis, the depiction of the ‘Partial behavioral model of IS use’ introduces the notion that future use will be based on expectations of future benefits (Seddon, 1997). Seddon (1997) hypothesised that the higher levels of expectation about the net benefits of future IS use should lead to higher levels of use. In addition, the solid line arrow from ‘IS Use’ to ‘Individual, organizational and societal consequences of IS use’ implies that more use is required to cause more consequences. Seddon (1997) posited that the consequences could be either good or bad.

Building on the work of DeLone and McLean (1992), Lin (2008) developed and empirically tested a community success model. The model, as shown in Figure 5.3, integrates the influences of both technical and social factors on the success of online communities. Lin (2008) reportedly collected data from 198 community members in the process of testing the model. The findings indicated that both member satisfaction and a sense of belonging were determinants of member loyalty within an online community context. In addition, system quality and information quality were found to affect member satisfaction. Levels of trust were found to influence an individual’s sense of belonging.

**Figure 5.3: Virtual community success model (Lin 2008)**

In transforming the DeLone and McLean model to a virtual community context Lin (2008) clarified two information system-specific constructs.
Firstly, ‘IS Use’ was replaced with ‘belonging to a community.’ Lin (2008) argued that, while ‘IS use’ may be appropriate for examining information system success, the construct was not particularly useful within an online community context. More specifically, Lin (2008) added that online communities are typically characterised by anonymity and voluntary behaviours and, as such, a sense of belonging is necessary to encourage participation. On this basis, she argued that a sense of belonging is an appropriate inclusion within the virtual community success model (Lin 2008).

Secondly, ‘Net Benefits’ was replaced with a ‘loyalty to the community.’ Lin (2008) argued that the inclusion of loyalty within the model is important because the barriers to joining online communities are typically low. She posited that the presence of loyalty creates stability among members and, therefore, plays a major role in the growth of an online community (Lin 2008).

A shortfall of the model is that it appears to have been empirically tested only once, by Lin (2008). To date, Lin’s model has only been tested amongst members of online communities who are undergraduate students and the test was completed several years ago. Lin (2008, p. 5) described this sample as a homogenous group representing a younger generation who were using online communities ‘to obtain enjoyment, entertainment, amusement and fun’ and was adamant that the findings derived from such a uniform group could not be applied to the general population.

5.3 THE CONCEPTUAL MODEL
The conceptual model is a modified version of the model developed by Lin (2008). Within the context of this thesis it is known as the ‘modified virtual community success model.’ The modified virtual community success model is shown in Figure 5.4. It assumes a relationship between the success measures. More specifically, the model depicts member satisfaction as being dependent on information quality, system quality and sense of belonging. Sense of belonging is depicted as being dependent on trust and social usefulness. Member loyalty is depicted as being dependent on member satisfaction and sense of belonging. Information quality, system quality, trust and social usefulness are displayed as independent variables.
While most of the constructs and associated interrelationships are consistent with Lin’s (2008) model, the fact that there has been a deliberate reversal of the arrow linking sense of belonging to member satisfaction is a significant point of difference.

Within the context of this research, the construct ‘sense of belonging’ was used to measure how strongly members felt that they were a part of the online community. ‘Member satisfaction’ was used to measure overall satisfaction with the online community. While both constructs were perceptual, member satisfaction was a much more inclusive concept than sense of belonging. It follows that levels of member satisfaction may be influenced by a wide range of social and technical factors, including an individual’s sense of belonging to the online community. On this basis, the arrow was reversed to better reflect the hypothesised relationship between the macro element, member satisfaction and the micro element, sense of belonging.

The modification was influenced by the work of Seddon (1997). Seddon (1997) modified the DeLone and McLean (1992) IS Success Model to show that several factors, including the perception of usefulness, influenced levels of satisfaction. He noted that user satisfaction must be influenced by a wider range of factors than simply usefulness (Seddon 1997).

The empirical work of Seddon and Kiew (1996) provided further support for the modification. After noting the inclusive nature of user satisfaction (a comparable construct to member satisfaction), they concluded that user satisfaction was the most general-purpose perceptual measure of system success.

The conceptual model, as shown in Figure 5.4, implies the following interrelationships:

- Improved information quality is expected to positively affect member satisfaction.
- Improved system quality is expected to positively affect member satisfaction.
- A greater sense of belonging is expected to positively affect member satisfaction.
- Higher levels of trust are expected to positively affect member sense of belonging.
- Higher levels of social usefulness are expected to positively affect member sense of belonging.
- A greater sense of belonging is expected to positively affect member loyalty.
• Higher levels of member satisfaction are expected to positively affect member loyalty.

In keeping with DeLone and McLean’s model (1992) and Lin’s model, the modified virtual community success model depicts virtual community success as being multidimensional with casual relationships between the dimensions (Lin 2008). These associations and related expectations have led to the formulation of the following set of hypotheses:

**Table 5.1: Summary of Hypotheses**

<table>
<thead>
<tr>
<th>Hypothesis 1</th>
<th>Individuals who are satisfied with the quality of the content are more likely to be satisfied with the community.</th>
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</thead>
<tbody>
<tr>
<td>Hypothesis 2</td>
<td>Individuals who are satisfied with the quality of the online application are more likely to be satisfied with the community.</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>Individuals who have a sense of belonging within the online community are more likely to be satisfied with the community.</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>Individuals who are satisfied with the community are more likely to feel a sense of loyalty towards the online community.</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>Individuals who have a sense of belonging within the online community are more likely to have a sense of loyalty towards the online community.</td>
</tr>
<tr>
<td>Hypothesis 6</td>
<td>Individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community.</td>
</tr>
<tr>
<td>Hypothesis 7</td>
<td>Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.</td>
</tr>
</tbody>
</table>

Figure 5.4 illustrates the conceptual model.
5.4 CHAPTER CONCLUSION

This chapter explored the interrelationships between the various determinants of IS success and virtual community success. In addition, it suggested that the modified virtual community success model provides a sound framework for measuring success within an online community context. The strength of the model is that the constructs reflect both technical and non-technical factors that impact on success.

Finally, a set of hypotheses based on the assumed interrelationships between the constructs was put forward to be tested within the context of this study.

In view of the fact that the conceptual model was identified within this chapter, the focus of the next chapter will be on further defining the key constructs, with a view to identifying suitable assessment items.
CHAPTER 6

MEASUREMENT DEVELOPMENT

6.1 CHAPTER OVERVIEW

The previous chapter established that the modified virtual community success model provides a sound framework for examining the factors that influence the success of an online community. It also identified a set of hypotheses suitable for testing within an online community context.

This chapter further defines the key constructs contained within the model. Survey items are then either selected or adapted from previous studies on the basis that they are suitable for measuring the key constructs. This approach is consistent with Seddon’s (1997), and DeLone and McLean’s (1992), view that success measures should suit the context of the empirical research.

The chapter concludes with the presentation of a Research Matrix, Table 6.1 that provides a summary of research objectives, constructs and assessment items.

6.2 SYSTEM QUALITY AND INFORMATION QUALITY

The modified virtual community success model, as shown in Chapter 5, Figure 5.4, includes two significant dimensions of quality: system quality and information quality. Lin (2008) posited that the taxonomy is consistent with DeLone and McLean’s (1992) interpretation. For the purposes of this study, system quality measured technical success and information quality measured semantic success. In addition, both constructs are represented as independent variables. This depiction resonates with Seddon’s (1997) view that it is possible for a system that is technically perfect to produce information which is of no use.

The first system characteristic measured was information quality. ‘Information quality’ is typically defined in terms of accuracy, relevance and timeliness of information
(Seddon 1997). It has been argued that it is a measure well suited to capture content issues, particularly within ecommerce applications (DeLone & McLean 2003). Seddon (1997) added that, within ecommerce environments, information quality could include web content. In such instances, he argued that the content should aspire to being personal, complete, relevant, easy to understand and secure. Realistically, however, he acknowledged that the same measures might not be able to be applied to all systems (Seddon 1997). Lin and Lee (2006) measured the construct, within an ecommerce environment, in terms of accuracy of information, usefulness of information, timeliness of information and availability of customised information.

DeLone and McLean (2003) argued that information quality is a critical dimension of the IS success model, and they strongly encouraged all researchers measuring information system success to include it within their research models. Information quality is equally important within online community contexts, as information is exchanged via real time options such as live chat sessions and non-real time options such as forum posts. Ridings, Gefen and Arinze’s (2002) description of online communities as environments within which people come together to give and receive information, stresses the importance of information quality within online communities.

For the purposes of this research, information quality measured the quality of online content within an online community. More specifically, it measured the accuracy of information, the currency of information, the relevance of information and the format of content. The following assessment items, informed by the work of Bailey and Pearson (1983), were taken from Lin (2008) on the basis that they were well suited to an online community context:

IQ1 The information provided by the online community is accurate.
IQ2 The information from the online community is up to date.

The following items were taken and adapted from the work of Lin (2008):

IQ3 The online community provides me with sufficient information.
IQ4 The content provided by community members is well presented by the online application.

Item IQ3 was further modified in response to feedback provided during preliminary testing, prior to the survey being made publicly available (see Chapter 7). The wording was updated to read, ‘The information provided within the online community is relevant to me.’

Respondents were asked to rate their responses using a five-point Likert scale, ranging from ‘never’ (scale =1) to ‘always’ (scale = 5).

The second system characteristic measured was system quality. In the past, researchers such as Doll and Torkzadeh (1988) measured system quality by determining how easy a particular application was to use. They argued that, if an application was easy to use, the users would become more experienced and take advantage of more aspects of the application (Doll & Torkzadeh 1988). This view is consistent with that of Davis (1989), who posited that the effort of accessing a particular application has the potential to outweigh the benefits of use, if the potential user finds the application too difficult to use. Wenger et al. (2005) also noted that malfunctioning online resources can make community participation very difficult.

More recently, researchers such as DeLone and McLean (2003) have argued that system quality should measure qualities such as usability, availability, reliability, adaptability and response times on the basis that they are valued by system users. DeLone and McLean (2003) also argued, along with Seddon (1997) that system quality is well matched to capture technical issues that hinder use, such as systemic bugs and user interface inconsistencies. It could be argued that system quality is a variable well suited to measure the technical success of an online community.

Within the context of this study, system quality was measured in terms of reliability, ease of use, response time and system flexibility (Lin 2008). On this basis, the following assessment item was taken from Lin (2008) to be used in this study:
SQ1  The online community application operates reliably.

Lin and Lee (2006) used a similar item to item SQ1 to measure reliability within an ecommerce context. It is equally well suited to an online community context.

The following item was adapted from the work of Lin (2008) and based on the work of DeLone and McLean (2003):

SQ3  Other people in the online community respond to my requests quickly.

The following item was adapted from the work of Lin (2008)

SQ4  I use the online community for a variety of purposes.

The following item was based on the work of Doll and Torkzadeh (1988):

SQ2  The online community application is easy to use.

Respondents were asked to rate their responses using a five-point Likert scale, ranging from ‘never’ (scale =1) to ‘always’ (scale = 5).

6.3  TRUST

The modified virtual community success model, as shown in Chapter 5, Figure 5.4, includes a social factor, trust, as a variable contributing to the success of online communities.

‘Trust’ is displayed as an independent variable with an arrow linking it to ‘Sense of Belonging.’ Lin (2008) argued that the presence of trust is extremely important within an online community. She hypothesised that if individuals trust other community members they will be more likely to participate and feel like they belong within the community. The Organisation for Economic Co-operation and Development (OECD 2001) reported that the presence of social capital is typically measured through participation rates and self-reported levels of trust.
The benefits of the presence of social capital within a community setting have been well documented within this thesis.

Ridings, Gefen and Arinze (2002) conducted empirical research into the effects of trust within online communities. Their findings suggested that trust is a key element in ‘fostering voluntary online cooperation between strangers’ within online communities. They argued that trust has two dimensions. The first is ability and benevolence. The second is integrity within the collective entity. On this basis, the following assessment items, based on the work of Ridings, Gefen and Arinze (2002) and Lin (2008), were used in this study:

TR1 I feel confident contributing to discussions within the online community.
TR2 The other online community members have useful things to contribute.
TR3 The other online community members are only concerned about themselves (reverse coded).
TR4 Online community members will try hard to be fair in dealing with each other.
TR5 The behaviour of other online community members is erratic (reverse coded).

Respondents were asked to rate their responses using a five-point Likert scale, ranging from ‘never’ (scale =1) to ‘always’ (scale = 5).

Item TR1 was further modified in response to feedback provided during preliminary testing, prior to the survey being made publicly available (see Chapter 7). The wording was updated to read, ‘I am able to contribute to discussions within the online community.’

6.4 SOCIAL USEFULNESS

While DeLone and McLean (2003) observed that ‘system usage’ continues to be used by researchers, they also noted that most studies that have adapted the DeLone and McLean IS Success model have replaced the ‘usage’ box with a ‘usefulness’ box. Seddon (1997), for instance, replaced the variable ‘use’ with the variable ‘perceived usefulness.’ Seddon (1997) defined ‘perceived usefulness’ as ‘a perceptual indicator of
the degree to which a person believes that using a particular system enhances his or her
task or group performance.’ The decision to include ‘perceived usefulness’ instead of
‘use’ as a variable is consistent with Seddon’s (1997) view that extensive use is not
necessarily an indicator of system success. Within work environments, for instance, it
may be compulsory for employees to use poor quality work based applications. In such
instances it could be argued that IS use would be a poor measure of success.

Lin, on the other hand, replaced the variable ‘use’ with the variable ‘social usefulness.’
Within Lin’s virtual community success model, social usefulness is displayed as an
independent variable.

Lin (2008) linked social usefulness to the culture of the online community. She
underlined its importance by arguing that social support (respect and recognition) within
online communities encourages member participation (Lin 2008). She noted that online
community members seek approval from others before they increase their level of
participation within the community. On this basis, she defended the inclusion of social
usefulness, as a construct, within the virtual community model.

The link between social usefulness and sense of belonging is consistent with Lin’s
(2008) view that individuals who perceive the online community to be socially useful
are more likely to feel a sense of belonging within the online community.

Within the context of this thesis, social usefulness specifically measured how socially
useful an online community was from the perspective of the user. To achieve this,
members of online communities were surveyed to determine how socially useful they
thought their involvement in online communities had been to them.

For the purposes of this research, the construct ‘social usefulness’ was measured
empirically, in terms of usefulness, worthiness, enablement of knowledge-sharing and
attendance to social needs. On this basis, the following item was taken and adapted
from the work of Rai, Lang and Welker (2002):

SU1 I find belonging to the online community useful.
In addition, the following item was taken from the work of Lin and Lee (2006), where it was applied to measure behavioural intention within an ecommerce context. It is equally well suited to an online community context:

SU2 Participation in the online community has helped me gain respect from other community members.

SU3 Using the online community enables me to share knowledge with other community members.

The following item was taken and adapted from the work of Gupta and Kim (2007), Lin (2008) and Teo et al. (2003):

SU4 Participation in the online community has helped me develop warm relationships with the other online community members.

Respondents were asked to rate their responses to all questions using a five-point Likert scale ranging from ‘never’ (scale =1) to ‘always’ (scale =5).

6.5 MEMBER SATISFACTION

‘Member satisfaction’ is displayed as a dependent variable. It is depicted as being dependent on system quality, information quality and sense of belonging. An arrow also links member satisfaction to member loyalty. Within the context of this study, member satisfaction measured members’ opinions of the online community. More specifically, the construct, member satisfaction was measured empirically, in terms of satisfaction with social interactions, handling of information needs and overall satisfaction.

The following assessment items were adapted from the work of Lin and Lee (2006), where they were applied to measure user satisfaction within an ecommerce context. They are equally well suited to an online community context:

MS1 Using the online community helps to satisfy my information needs.

MS3 Using the online community helps to satisfy my social needs.
 Respondents were asked to rate their responses using a five-point Likert scale ranging from ‘never’ (scale = 1) to ‘always’ (scale = 5).

The following assessment items were taken from Lin and Lee (2006) after being adapted from the work of Seddon and Kiew (1996):

MS2 Overall, I am satisfied with the virtual community.
MS4 Overall, participation in the online community has been an unsatisfactory experience (reverse coded).

Respondents were asked to rate their responses using a five-point Likert scale ranging from ‘strongly disagree’ (scale = 1) to ‘strongly agree’ (scale = 5).

### 6.6 SENSE OF BELONGING

‘Sense of Belonging’ is displayed as a dependant variable. It is dependant on levels of trust and social usefulness. Arrows also link ‘sense of belonging’ to ‘member satisfaction’ and ‘member loyalty.’ Within the context of this study, sense of belonging was used to measure how strongly members felt that they were a part of the online community. Lin (2008) argued that a sense of belonging is critical to the expansion and development of an online community. She posited that it is the sense of belonging that motivates individuals to participate in an online community. For the purposes of this study, the following assessment items developed by Lin (2008) were used to determine a sense of belonging:

SB1 I feel a strong sense of belonging to the virtual community.
SB2 I enjoy being a member of the virtual community.
SB3 I am very committed to the virtual community.

The following assessment item was adapted from the work of Lin (2008):

SB4 The other members seem to enjoy belonging to the online community.
Respondents were asked to rate their responses using a five-point Likert scale ranging from ‘never’ (scale =1) to ‘always’ (scale = 5).

6.7 MEMBER LOYALTY

‘Member loyalty’ is displayed as a dependant variable. It is dependant on perceptions of member satisfaction and sense of belonging. Information quality, system quality, trust and social usefulness also indirectly influence member loyalty.

Lin (2008) argued that the stability associated with member loyalty plays a significant role in expanding the community. Within the context of this study, member loyalty was used to measure member participation. For the purposes of this study, the following assessment items were adapted from the work of Lin (2008):

ML1 I believe it is worthwhile for me to continue to participate in the online community.
ML3 I am willing to have a say in how the online community operates.
ML4 I am willing to communicate with other community members.

Respondents were asked to rate their responses using a five-point Likert scale ranging from ‘never’ (scale =1) to ‘always’ (scale = 5).

The second assessment item, ‘ML2’, was adapted from the work of Lin (2007), where it was applied to measure behavioural intention. It is equally well suited to measure member loyalty:

ML2 I am very likely to continue to participate in the online community in the future.

Respondents were asked to rate their responses using a five-point Likert scale ranging from ‘strongly disagree’ (scale =1) to ‘strongly agree’ (scale = 5).
6.8 CHAPTER CONCLUSION

This chapter considered the assessment items that were used in this research. They measured the following constructs:

1. Information quality  (Lin 2008; Seddon & Kiew 1996)
2. System quality      (Doll & Torkzadeh 1988; Lin 2008)
3. Member satisfaction (Lin & Lee 2006; Seddon & Kiew 1996)
4. Sense of belonging  (Lin 2008; Teo et al. 2003)
5. Member loyalty      (Teo et al. 2003; Yoo Suh & Lee 2002)
7. Social usefulness   (Lin 2008; Rai, Lang & Welker 2002)

It was established, within this chapter, that each item was sourced from instruments that had been successfully utilised within past research projects. A Research Matrix, with research objectives, constructs and assessment items, is displayed as Table 6.1: Research Matrix.

The next chapter will detail the research methodology used for data collection.
<table>
<thead>
<tr>
<th>Research objectives</th>
<th>Implications</th>
<th>Literature reviews</th>
<th>Hypotheses</th>
<th>Construct and Assessment items</th>
</tr>
</thead>
<tbody>
<tr>
<td>To identify the factors which determine member satisfaction with an online community.</td>
<td>For owner / moderators of online communities to better understand the informational needs of potential and existing members.</td>
<td>Ridings, Gefen and Arinze’s (2002) description of online communities as environments within which people come together to give and receive information stresses the importance of information quality within online communities.</td>
<td>H1. Individuals who are satisfied with the quality of the content are more likely to be satisfied with the community.</td>
<td>Information quality</td>
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<tr>
<td></td>
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<td>Q13. Accuracy of information</td>
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<td>Q14. Currency of information</td>
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<td>Q15. Relevancy of information</td>
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<td>Q16. Format of content</td>
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<td>To identify the factors which determine member satisfaction with an online community.</td>
<td>For developers of online communities to better understand the system needs of their potential and existing users.</td>
<td>Users are more likely to become experienced and take advantage of more aspects of an application if the application is easy to use (Doll &amp; Torkzadeh 1988).</td>
<td>H2. Individuals who are satisfied with the quality of the online application are more likely to be satisfied with the community.</td>
<td>System quality</td>
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<td>Q9. Reliability of system</td>
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<td>Q10. Ease of access</td>
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<td>Q11. Response time</td>
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<td>Q12. System flexibility</td>
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<tr>
<td>To understand the relationship between member satisfaction and sense of belonging within online communities.</td>
<td>For owner / moderators of online communities to better understand the social needs of their members.</td>
<td>It is reasonable to assume that individuals who feel like they belong within a community will be more likely to be satisfied with the community (Lin 2008).</td>
<td>H3. Individuals who have a sense of belonging within the online community are more likely to be satisfied with the community.</td>
<td>Sense of belonging</td>
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<td>Q26. Identification with community</td>
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<td>Q27. Involvement in the community</td>
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<td>Q28. Commitment to community</td>
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<td>Q29. Morale of community</td>
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<tr>
<td><strong>Research objectives (continued)</strong></td>
<td><strong>Implications (continued)</strong></td>
<td><strong>Literature reviews (continued)</strong></td>
<td><strong>Hypotheses (continued)</strong></td>
<td><strong>Construct and Assessment items (continued)</strong></td>
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<tr>
<td>To understand the relationship between sense of belonging and member loyalty within online communities.</td>
<td>For owner / moderators of online communities to better understand how to retain members.</td>
<td>Online communities are typically characterised by anonymity and voluntary behaviours, so a sense of belonging is necessarily to encourage participation (Lin 2008).</td>
<td>H5. Individuals who have a sense of belonging within the online community are more likely to have a sense of loyalty towards the online community.</td>
<td><strong>Trust</strong>&lt;br&gt;Q17. Ability of respondent.&lt;br&gt;Q18. Abilities of community members.&lt;br&gt;Q19. Integrity within the collective entity / benevolence of community members.&lt;br&gt;Q20. Integrity within the collective entity / benevolence of community members.&lt;br&gt;Q21. Integrity within the collective entity / benevolence of community members.</td>
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<tr>
<td>To understand the relationship between sense of trust and sense of belonging within an online communities.</td>
<td>For owner / moderators of online communities to better understand how to foster online cooperation between members.</td>
<td>Trust is a key element in ‘fostering voluntary online cooperation between strangers’ within online communities. It has two dimensions. The first is ability and benevolence. The second is integrity within the collective entity. (Ridings, Gefen &amp; Arinze 2002)</td>
<td>H6. Individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community.</td>
<td><strong>Social usefulness</strong>&lt;br&gt;Q22. Usefulness of being community member.&lt;br&gt;Q23. Worthiness of using community.&lt;br&gt;Q24. Enablement of knowledge sharing.&lt;br&gt;Q25. Attendance to social needs.</td>
</tr>
<tr>
<td>To understand the relationship between sense of belonging and sense of social usefulness within online communities.</td>
<td>For owner / moderators of online communities to better understand the importance that members place on existence of social support.</td>
<td>Social support (respect and recognition) within online communities encourages member participation (Lin 2008).</td>
<td>H7. Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 7

RESEARCH METHODOLOGY

7.1 CHAPTER OVERVIEW

The chapter commences by restating the research objectives. Next, the methodology used to gather data and the associated limitations are described. Key elements of the online survey are then highlighted and the testing, subsequent modifications, administration and promotion of the survey are detailed.

7.2 RESEARCH OBJECTIVES

A key objective of this research was to investigate the interrelationships between the technical and social factors that impact on online community success. The objective was achieved by testing the applicability of a modified version of the virtual community success model developed by Lin (2008), within the general population.

The model, which incorporates social and technical factors that impact on online community success, was based on the work of previous researchers. Significant influences included DeLone and McLean’s (1992) well established IS Success Model, and later modifications of this model by Seddon and Kiew (1996) and Seddon (1997). The research methodology used in this study supported the research objective and enabled the status of each hypothesis displayed in Table 5.1 to be assessed.

7.3 RESEARCH PHILOSOPHY AND PARADIGMS

Prior to assessing the status of the hypotheses and the applicability of the model, the researcher used an online survey to gather relevant empirical data. The research paradigm was positivist. For the purposes of this research, online community success was a value judgement made by an individual. This perspective is consistent with Wenger et al’s (2005) view that although ‘community technology’ may be designed for communities, individual members are the ones who ultimately experience the
technology as they engage with the communities. It is also resonates with Seddon’s (1997) observation that different people using the same system may draw very different conclusions about the success of the system.

7.4 SAMPLING SIZE AND DATA COLLECTION TECHNIQUES

Lin (2008) reported that to date, the virtual community success model had only been tested amongst members of an undergraduate student population. Lin reportedly collected data via a paper-based survey that was completed by 198 undergraduate students. Lin (2008, p. 5) described this sample as a homogenous group representing a younger generation who were using online communities ‘to obtain enjoyment, entertainment, amusement and fun.’

An objective of this research was to test the modified virtual community model within the general population, using a similar sample size ($n = 198$).

Within the context of this research, the utilisation of an online survey to collect data had definite advantages. Most notably the self-reported survey enabled the researcher to provide a sizable, diverse sample at low cost (Kraut et al. 2004). It enabled the researcher to recruit participants both nationally and internationally. Communication with such geographically diverse participants would not have been practical or financially viable if more traditional methodologies had been implemented (Beddows 2008).

The research findings of Gosling et al. (2004) also supported the choice. They compared data from a self-selected, self-reported online survey with 510 published, more traditional paper-based methods and found that internet-based data samples were more representative of the general population than data samples derived from more traditional methods. More specifically, they found internet-based samples relatively diverse with respect to gender, socioeconomic status, geographical region and age (Gosling et al. 2004). They also found that data collected online was not significantly affected by repeat responders or non-serious responders.
It has been argued, however, that while data collected via an online survey can provide valuable insights into the perspectives of a subset of the population, it may not represent the opinions of the broader population. It is implied that any generalisations made about an internet-based sample may not truly reflect the general population. It has also been noted that there is currently no sampling frame which provides a random sample of Internet users (Kraut et al. 2004). With these points in mind, the researcher implemented a multiple site entry technique (Reips 2002). A link to the survey and an invitation to participate in the research was distributed, via email, to a range of online community members and owners across a range of applications, including Facebook, Yahoo Groups, Ning and My Connected Community. The survey was promoted to owners of groups and on discussion boards that were likely to attract different types of participants.

7.5 QUESTIONNAIRE DESIGN AND TESTING

The online survey used in this study was created by the researcher using ‘Opinio’ and was physically located on secure servers at Swinburne. Opinio was used to collect and store the data for analysis. The application was configured to support anonymous participation. The configuration assured anonymity, confidentiality and privacy throughout the study and made it impossible for the researcher to make links between survey responses and specific people. The online form of the survey also allowed the participants to complete the survey at a time and location convenient to them. In addition, the survey was configured so that participants could save and exit the survey at any time and return at a later time/date to recommence the survey.

The online survey was kept as brief as possible to minimise respondent inconvenience and to encourage participation. Most survey questions were designed as closed-ended questions, with respondents being presented with a finite number of pre-coded responses for selection.

Four questions, however, were open-ended. These questions allowed respondents an opportunity to provide a response other than a pre-coded response. Firstly, question six (Appendix B) was configured to allow respondents to type the name of the application that they used the most, if the application name was not listed. Secondly, question nine
was configured to allow respondents to enter the type of community to which they belonged, if the type was not listed. Thirdly, question seventeen was configured to allow respondents to type the name of their country of residence, if the name was not listed. Fourthly, respondents were provided with the opportunity to make any additional comments about what they thought makes online communities successful via an open-ended question at the end the survey. The additional comments are displayed within Table 8.1 in Section 8.4 of this thesis.

Prior to the survey being made available to the general public, the project was submitted for ethical review to the Swinburne University Human Research Ethics Committee (SUHREC). Ethics clearance was granted on 31st July 2009 (Appendix A).

After being granted ethical clearance, the online survey was subjected to useability testing (Dillman, Smyth & Christian, 2008). In the process, survey wording and layout was tested by eleven volunteers. The volunteers were recruited from the researchers own networks and were members of various online communities. Verbal (via phone and in person) and written (via email) invitations to participate in the test were based on the contents of the ‘Information and Informed Consent Statements’ (Appendix C) and the ‘Invitation to Participate in Research Email’ (Appendix E).

Table 7.1 lists the volunteers’ demographic characteristics including, gender, age, country of residence, internet experience, current membership of online communities, most frequently visited online community application and frequency of visits. It also lists the types of online communities that the participants elected to focus on as they progressed through the survey and the length of time that they were members.

Ten females and one male participated in the test. All were more that 18 years of age and belonged to at least one online community. Seven volunteers were older than 50 years of age and four indicated that they were between the ages of 26 and 50. Nine volunteers resided in Australia and two were located in the United Kingdom. Seven of the participants lived in Victoria. One volunteer lived in South Australia and one lived in Queensland.
Most of the individuals who were asked to participate in the test were experienced internet users. Several had moderated, or created, online communities in at least one application (such as My Connected Community). Nine of the volunteers had used the internet for more than five years. Nine of the volunteers also belonged to between one and five online communities at the time of the test. The applications used by the volunteers were varied and included Facebook, My Connected Community and Yahoo Groups. The types of community that the volunteers elected to focus on as they participated in the test were also varied. They included communities of place, communities of interest, communities of purpose and communities of practice.

Table 7.1: Demographic characteristics of participants in test \((n = 11)\)

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>26 – 50</td>
<td>4</td>
</tr>
<tr>
<td>Over 50</td>
<td>7</td>
</tr>
<tr>
<td>Country of residence</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>9</td>
</tr>
<tr>
<td>UK</td>
<td>2</td>
</tr>
<tr>
<td>Australian state/territory</td>
<td>((n = 9))</td>
</tr>
<tr>
<td>Victoria</td>
<td>7</td>
</tr>
<tr>
<td>Queensland</td>
<td>1</td>
</tr>
<tr>
<td>SA</td>
<td>1</td>
</tr>
<tr>
<td>Internet experience</td>
<td></td>
</tr>
<tr>
<td>less than 1 year</td>
<td>1</td>
</tr>
<tr>
<td>1-2 years</td>
<td>0</td>
</tr>
<tr>
<td>Length of membership of online community</td>
<td>3-5 years</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Current membership of online communities</td>
<td></td>
</tr>
<tr>
<td>1-5 online communities</td>
<td>9</td>
</tr>
<tr>
<td>6-10 online communities</td>
<td>1</td>
</tr>
<tr>
<td>more than 10 online communities</td>
<td>1</td>
</tr>
<tr>
<td>Most frequented online community application</td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td>4</td>
</tr>
<tr>
<td>My Connected Community (MC2)</td>
<td>6</td>
</tr>
<tr>
<td>Yahoo groups</td>
<td>1</td>
</tr>
<tr>
<td>Frequency of site visits to most frequented online community application</td>
<td></td>
</tr>
<tr>
<td>I visit once a day</td>
<td>7</td>
</tr>
<tr>
<td>I visit several times a day</td>
<td>1</td>
</tr>
<tr>
<td>I log on in the morning and stay logged on all day</td>
<td>0</td>
</tr>
<tr>
<td>I don't visit the site every day</td>
<td>3</td>
</tr>
<tr>
<td>Online community type</td>
<td>(Total = 16) (More than one</td>
</tr>
</tbody>
</table>
The verbal (via phone or in person) and written (via email) feedback received highlighted a need to clarify three questions. The feedback informed a revision of the survey that led to three questions being modified. The feedback and resulting modifications are detailed in Table 7.2.

**Table 7.2: Online survey questions - Feedback and modifications**

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Original survey question</th>
<th>Volunteer feedback</th>
<th>Modified survey question (based on feedback)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4</td>
<td>Please indicate how long you have been a member of an online community that you belong to (for example Facebook)</td>
<td>How do I answer this? I have been a member of Facebook for 1 year and</td>
<td>Consider one online community that you belong to (for example Facebook)</td>
</tr>
<tr>
<td>Q10 Item 4</td>
<td>The {specific application name inserted is dependent on participant response to Q6} online community provides me with sufficient information.</td>
<td>‘This question is hard to answer. Are you asking for sufficient information about how the community works – eg how do I upload an image, or sufficient information about the area of interest? I find this question hard to answer for a community like Facebook.’</td>
<td>The information provided within the online community is relevant to me.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Q10 Item 6</td>
<td>I feel confident contributing to discussions within the {specific application name inserted is dependent on participant response to Q6} online community.</td>
<td>What do you mean by ‘feel confident’ – eg I don’t feel confident to contribute to facebook discussions because I don’t trust what the facebook company will do with my data – this is different from a lack of confidence in what I want to say.</td>
<td>I am able to contribute to discussions within the online community.</td>
</tr>
</tbody>
</table>
The focus of the original version of Question 10, Item 4, was on the completeness of information in relation to the topic of interest. The revised version focused on the relevance of information. The literature suggested that relevance of information is a valid measure of information quality (Seddon 1997). As a result of the feedback, the researcher modified the question to focus on relevance of information.

The literature also suggested that ‘ability’ is one dimension of trust (Ridings, Gefen & Arinze, 2002). Given the confusion regarding the meaning of the original version of Question 10, Item 6, the researcher modified the question to focus on the respondents’ ability.

After the modifications were completed three of the volunteers were asked to review the revised version of the survey. The researcher set the survey to preview mode at http://opinio.online.swin.edu.au/admin/surveyAdmin.do?action=viewSurveyAdmin&surveyId=6586 and invited the volunteers to individually step through the questions and provide feedback in the presence of the researcher. No further modifications were made as a result of this process.

7.6 ADMINISTRATION METHODS

It its final form, the online survey was administered incorporating a series of check boxes and four open-ended questions and included the revisions resulting from the useability test. The online survey was made available to members of the general public on 1st August, 2009 and it was closed on 31st October, 2009. The duration of the survey was three months.

The researcher kept the survey open to the public and continued to invite participation, until the desired number of completed responses had been reached. This decision resulted in the survey remaining open to the public for four weeks longer than originally anticipated. However, not withstanding the suggestion from Kraut et al. (2004) suggestion that response rates of online surveys are reportedly lower than mail or telephone surveys, the desired number of completed responses was obtained within an acceptable time frame.
Initially convenience sampling was used to promote the survey to colleagues, family and friends of the researcher. Snowball sampling was also used as members of the convenience sample were asked to promote participation in the survey via their own networks. The survey was also promoted to owners and moderators of a range of online communities who were not known to the researcher. The individuals were invited to participate in the research via email (Appendix E). The email included an invitation to participate and a link to the survey. Participants were invited to access the survey by clicking on a link at http://opinio.online.swin.edu.au/s?s=5338. A print version of the online survey is displayed in Appendix B.

When individuals clicked on the link they were presented with an online version of the information statement (Appendix D). The statement detailed the purpose of the survey, why it was important to participate and ethical considerations. It also advised participants that their consent to participate in the study was implied by the return of their completed questionnaire.

Participants were required to indicate, at the commencement of the survey, that they are at least 18 years of age and belonged to at least one online community. The questionnaire was configured so that ineligible participants were removed from the survey. This treatment of self-identified minors was in accordance with recommendations put forward by Kraut et al. (2004). No specific gender was targeted.

While it is possible that members of ‘open’ communities participated in the survey, the researcher only approached owners and moderators of moderated, or ‘closed,’ communities. The communities included genealogy groups, professional support groups, crisis support groups, self-help groups, family groups, and sporting groups. The communities had been created in a range of applications including Facebook, Yahoo Groups, Ning and My Connected Community.

Online community owners and moderators were also asked to promote the survey to their members. In addition, permission was sought from online community owners and moderators to promote a link to the survey via a range of online community forums, discussion boards and mailing lists within their respective online communities.
Several of the group owners/moderators who were contacted were very supportive of this research and either allowed the researcher to post an invitation to participate in the study, or offered to post the invitation on behalf of the researcher. One obvious demonstration of support was when a group owner advised the researcher to include his name and a statement of support in an invitation posted to ‘his’ group forum. In that instance, the researcher was told that the statement of support would counteract the members’ disdain for postings that were not strictly on topic.

Participation was totally voluntary and the data was self-reported. As previously stated, the study adopted the position that success was a value judgement formed by the participant from their point of view. With that in mind, it was reasonable to expect that different people may have reached different conclusions about the same online community.

After the online survey was closed to members of the public, the data from all completed surveys was transferred electronically, from Opinio, to a standard statistical software program, SPSS. The data was transferred so that it could be analysed and emerging themes and patterns could be identified within the context of current theory.

7.7 CHAPTER CONCLUSION

This chapter outlined the methodology used for data collection within this study.

With the conceptual model and the methodology well documented, the next part of this thesis will document the data analysis and the research findings.
PART IV: FINDINGS AND ANALYSIS

Chapter 8: Preliminary analysis
Chapter 9: Status of hypotheses
Chapter 10: Conclusions
CHAPTER 8

PRELIMINARY ANALYSIS

8.1 CHAPTER OVERVIEW

The previous section presented the conceptual model and outlined the methodology used in this study. The purpose of this chapter is to provide a demographic overview of survey participants and a preliminary analysis of the data gathered via the online survey.

8.2 SCREENING AND CLEANING

Of the 286 online surveys commenced, 213 were completed.

Respondents were required to be 18 years of age or older, and to be a member of at least one online community. The first question asked respondents if they were over 18 years of age. Two respondents who were younger than 18 years of age were removed from the survey. The second question asked respondents if they were a member of at least one online community. Seven respondents who were not members of any online community were eliminated from the survey. A further sixty respondents commenced the survey but did not answer any of the questions. They were subsequently removed from further analysis.

The data generated by the completion of the 213 surveys was checked for inconsistencies. The review identified 11 inconsistent responses to reverse-coded assessment items. Once identified, they were removed from further analysis.

Three of the participants responded inconsistently to the reverse-coded assessment item measuring trust. Their responses indicated that they thought that other members always tried hard to be fair in dealing with each other and that they thought other members always behaved erratically. The completed surveys were removed from further analysis.

A further seven participants provided inconsistent responses to the reverse-coded assessment item measuring member satisfaction. They indicated that they always found
participation in the online community to be a totally satisfactory experience and a totally unsatisfactory experience. The completed surveys were removed from further analysis.

Another participant provided inconsistent responses to both the reverse-coded assessment item measuring trust and the reverse-coded assessment item measuring member satisfaction. The completed survey was removed from further analysis.

Following the data check, 202 completed online surveys were available for analysis.

8.3 PROFILE OF RESPONDENTS

This section describes the respondents’ demographic characteristics including, gender, age, country of residence, internet experience, current membership of online communities, most frequently visited online community application and frequency of visits. It also lists the types of online communities that respondents elected to focus on as they progressed through the survey and indicates the length of time that respondents were members.

The majority of respondents were 26 years of age, or older (n=195). A graphical representation of the age distribution of respondents is shown in Figure 8.1. A total of 104 participants were between the ages of 26 and 50, while 91 were more than 50 years of age. Only seven participants were 18 - 25 years of age.
As Figure 8.2 indicates, most respondents were women. Altogether, 172 participants were female and 30 were male. This was a surprising result because most of the online groups to which the researcher promoted the survey had male moderators.
As shown in Figure 8.3, most respondents resided in either America or Australia. A total of 36% of participants resided in Australia and 49% lived in the United States of America. Only 12% of respondents did not reside in any of the nominated countries.

**Figure 8.3: Country of residence (n = 202)**

The length of time that participants had been using the internet is shown in Figure 8.4. Most had more than five years experience (n=188). Only four people had used the internet for two years or less.

**Figure 8.4: Length of time using the internet**
The online applications most frequently used by respondents are shown in Figure 8.5. Yahoo Groups was the most popular application (47%). Others used Facebook, My Connected Community (MC2), Twitter, Library thing.com and Ning.

**Figure 8.5: Online application most frequently used by respondents \((n = 202)\)**

The regularity of visits to the most frequented online community applications, as shown in Figure 8.6, varied among respondents. While 42% of respondents visited the site several times a day, 29% visited only once each day. A total of 19% of respondents did not visit the site each day, while a further 10% logged on in the morning and stayed logged on all day.

**Figure 8.6: Visits to most frequented online community application \((n = 202)\)**
All participants belonged to at least one online community. Online community membership at the time of participation is graphically displayed in Figure 8.7. Most respondents belonged to 1-5 online communities ($n=126$).

**Figure 8.7: Current membership of online communities**

![Pie chart showing current membership of online communities.](image)

When completing the survey, participants focused on different types of communities. As shown in Figure 8.8, 40% were classified as communities of interest, 27% were classified as communities of practice, 13% were classified as communities of purpose and a further 9% were classified as communities of place. Only 11% of the respondents indicated that the type of community was ‘other.’ The relatively large number of responses ($n=316$) can be explained by the fact that respondents were able to link one community to several classifications. They could for example, indicate that a group was both a community of place and a community of practice.
As shown in Figure 8.9, the participants had belonged to the online community that was the focus of their survey responses for varying lengths of time. Altogether 39% had been a member for more than five years, 28% had been a member for between three and five years and 22% had been a member for between one and two years. Only 11% of respondents had been a member for less than a year.
8.4 ADDITIONAL COMMENTS BY RESPONDENTS

The final question in the online survey was open-ended. It provided participants with an opportunity to comment as individuals, about what they thought made online communities successful or submit additional comments. Nearly one-half of the survey participants responded to the open-ended question. In total, 88 individual responses were received.

Table 8.1 provides a matrix of the responses to the open ended question categorized across nine categories. The categories are ease of communication, access to information, access to new contacts, member sense that the environment is positive, member sense that the online community had rules and boundaries, member sense of involvement, member sense of shared circumstances and miscellaneous. Several respondents also elected to use the opportunity to express their concerns about online communities. These responses were categorized as concerns. In total 88 people provided a response to the open ended question.
Table 8.1: Additional comments provided by respondents

The following categorized comments were provided by respondents in response to Question 19 on the online survey: ‘Are there any additional comments you would like to make about what you think makes online communities successful?'

<table>
<thead>
<tr>
<th>Comments</th>
<th>Ease of communication locally and globally (e.g. family, friends, colleagues)</th>
<th>Access to information, expertise, ideas &amp; support</th>
<th>Access to new contacts</th>
<th>Member sense that environment is positive (e.g. Diverse opinions respected and timely responses to posts)</th>
<th>Member sense that community has rules and boundaries</th>
<th>Member sense of involvement: through participation and/or observation</th>
<th>Member sense of shared circumstances / interests / purpose</th>
<th>Misc</th>
<th>Concerns (e.g. privacy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Love to keep contact with family and friends. Good cross generational communication tool</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>2. &lt;Name of online community&gt; is an online community that shares information with teachers, homeschoolers, student teachers, and anyone interested in &lt;topic&gt;. The expertise from this group is invaluable to anyone who belongs to it. It enhances everything I teach, and the support is wonderful.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. We have an active community. There are 5-10 posts per day which keeps everyone in touch.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>4. On line communities have changed my life. I am grateful that they exist!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comments (Continued)</td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>5.</td>
<td>I love my group! There are a few negative people as reflected in my responses. However, the majority are very supportive, willing to share information/ideas when asked, and have very positive tones in their responses. I believe that they love what they do, and it acts as a motivator to those reading.</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The &lt;name of online application&gt; group is a very informative community and, as a first year teacher, I appreciate all information that I get from this group. I hope to contribute more in the future.</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>&lt;name of online application&gt; is a great networking tool.</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I was concerned that the privacy issues…. I notice more and more that I am a member of an online community as soon as I visit a major news site, so that other visitors can now follow which articles I not only comment on and who knows whatever else.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>It is great for intergenerational exchange of information. Also to 'eavesdrop' on conversations between friends of younger members of the family and find out what they are thinking</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comments (Continued)</td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>10.</td>
<td>Ease of access and future mobile interfaces and global location services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>My community is only family and very close friends (as opposed to my kids who gather as many people as possible!) So for me the best part is having current information about what is happening for them in their lives. Shared information amongst many people that you could not put together in 20 phonecalls to 20 people. And I love being a part of their lives in such an instant way.</td>
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| 12.| This questionnaire forced one to focus on one community. I chose <name of online application> where a whole range of different communities come together for me. Some people I know physically, some people I have known virtually for years from other more specific online communities. For example I have been part of an <name of online community> listserv community for nearly ten years. This is a very focussed and specific subject. Many of these people followed me to <name of online application> and I now communicate with them there. | | | | | | | | | | ✓
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<th>Comments (Continued)</th>
<th>Ease of communicating locally and globally (eg. family, friends, colleagues)</th>
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<td>13.</td>
<td>Creating links with interesting people. EG - to benefit from &lt;name of online application&gt; one needs to follow interesting and active participants</td>
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<td>14.</td>
<td>I joined &lt;name of online application&gt; because my children were on it and living away from home - one (and soon both) overseas. Once I'd joined, a number of former colleagues, friends and acquaintances found me and sent friend requests, which I accepted. It primarily gives me a way to stay in touch with family, but it also helps to maintain links with others that were otherwise in the process of fading away (and I think maintaining those links is a good thing ...). While I do also use it to follow some interests, I don't think it is very useful in my case for bringing together a community of interest in which I would be willing to be committed and involved because it seems a bit lightweight for anything serious.</td>
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<td>15.</td>
<td>It's a good way for people to share ideas and communicate. It makes you realize we are not alone in this world!</td>
<td>✓</td>
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<td>16.</td>
<td>Members with a willingness to contribute rather than just consume. Members who are willing to contribute thoughts rather than just finished artifacts</td>
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<td>17.</td>
<td>A willingness to share and a trust that your information is being used in a positive manner</td>
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<td>18.</td>
<td>A good owner of an &lt;name of online application&gt; project, who can create up a number of online community groups with a common interest, and managing their continual existence makes an online community work effectively and be successful. It takes a lot of time and dedication, but it is rewarding for me. I am very glad that I happen to be a part of it.</td>
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<td>19.</td>
<td>There has to be someone driving the community. Substantial numbers of members of the communities do not participate, but are happy to watch what happens. I can't speak for different types of communities, but where the communities of interest tend to attract the older person, they are less likely to participate, but still get a lot out of reading the posts, and so on. I am also a very keen reader of several political blogs in America, but have myself never posted a comment because I don't feel qualified to make a comment, but it certainly satisfies my interest just reading them. Every day.</td>
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<td>20.</td>
<td>Having members that are respectful of other people’s views but still feel that they can post their own views in a thoughtful way. Having members that respond to other peoples posts in an informative an supportive way. Ease of use and additional options within the site eg blogging, online chat, forum, adding information about yourself, posting members, adding pictures/attachments, social groups. Feeling safe within the community. Having a social side to the community where you can meet in person.</td>
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<td>21.</td>
<td>Our community is notable for a particular culture of respect and consideration for others. Flaming and other forms of abuse are not tolerated and very very rare. Even contentious subjects (and the nature of our community generates lots of these) are discussed calmly and with tolerance for a wide variety of views. Many new members comment about this friendly and respectful culture. I think is an essential and defining feature of our community and makes it work.</td>
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<td>22.</td>
<td>I think that &lt;name of online community&gt; is successful because it has a purpose and it sticks to it. It is exclusive - a place where people are not judged or made to feel bad about their thoughts, their decisions, their path in life. It is successful because everyone there has something in common and that something is rather personal. A like minded group of people that actually understand - where so many in my immediate family and friends simply cannot relate. It is good to have other people out there that really understand and get you (with regards to that one thing that we all share).</td>
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<td>23.</td>
<td>I think on line communities are most successful when there is a strong comminality of purpose between members. While the members of &lt;name of community&gt; are in many ways very diverse, the thing that brings us together is an important enough part of our lives to make other differences less relevant. I also think the size of the community is very relevant. 4 to 5 years a go &lt;name of online community&gt; was only about 20 members. It is now about 300 (though probably only about 150-200 are active), and that is small enough to feel that you 'know' the other members, to feel like a village. I wonder if it will be as successful when it has 1000 members.</td>
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<td>24.</td>
<td>I joined 2 similar communities at the same time, but I only feel at home with one of them, and although I follow the conversations on one site, &lt;name of online community&gt;, I respond infrequently whereas on the other, &lt;name of online communities&gt;, I have posted thousands of times. I think the main reasons &lt;name of online community&gt; was successful for me were (1) the user interface was much easier, so it was easier to navigate around and find things, and to include photographs etc to personalise my experience; and (2) early on I received personal messages from senior members of the site who really made me feel at home, and who encouraged me to contribute more than perhaps I would have without that personal touch. And once I started to contribute, the more I put in, the more I got out of the experience.</td>
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<td>25.</td>
<td>I would just like to add that although I do not visit the site regularly (only to actually post a comment), I see the thread daily as it automatically sends to my inbox and I dont need to log in to read the posts. That makes the answer to the early question misleading I think because I actually keep up with the community on a daily basis.</td>
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<td>26.</td>
<td>Online communities allow members to be them selves with out feeling judged. They are a wide birth of people who understand your circumstances with out even knowing you.</td>
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<td>27.</td>
<td>Basically, the online community's members are 'faceless', you are actually communicating in cyberspace with strangers. Beyond the network, to be involved 'socially' by really knowing the members is very bleak.</td>
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28. I have been a member of `<name of online community>` for approx 10 months…Initially i found it very useful, comforting but lately I have been finding the women on it too judgemental and insensitive to other women's plights, maybe it is just the fact that we are dealing with very stressful situations and women can be `<negative term>`, but to be honest if has really left a bad taste in my mouth and have basically stopped posting. I suppose that is the good thing about an online community, it is easier to stop contact, because you are not dealing with people face to face and you do not feel so obligated to stay.

29. 1) Moderate moderate moderate. I've run `<name of online community>` since 2000… From the beginning, I've moderated the group fairly keenly. I make sure that arguments are settled, that abusive members are removed, that people stick to the clear rules of the group. 2) Remove spam as soon as it appears. The more 'noise' in a group, the less value it has as a community because the spam diminishes the experience. 3) Reward participation by encouraging people who post for the first time, anyone who posts an article or item without prompting. I usually comments on these threads, with feedback or thanks. People need to know that by initiating conversations, they are enriching the experience for all concerned.
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<tr>
<td>30.</td>
<td>the fact that many teachers who belong to the educational groups are very willing to share idea, insights and Web sites that make it easier to plan and/or deliver lessons  AND the fact that many teachers who participate do not have many opportunities to collaborate with their peers in the course of the day and/or work in buildings where there might be only one or two teachers per grade level</td>
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<td>31.</td>
<td>It is one of the most helpful &lt;topic&gt; site &amp; delivers a rapid response. I enjoy having the ability to respond &amp; receive responses both via the group &amp; via my own email address. I open my computer to this site &amp; I never close down without checking to see what else might be there. Thank you for asking &amp; I hope this response aids your efforts.</td>
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<td>32.</td>
<td>for a very difficult topic with many unknown solutions, this is a very effective way to communicate easily quite easily. this is a &lt;name of online community&gt; &lt;topic&gt; site and you have to understand there is a very difficult and challenging &lt;specific topic&gt; to research without the collective group, I would not have even learned half of the things I have already learned in the last few weeks, even new websites available within my own county.</td>
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<td>33. Solid focus, adherence to group interests, good moderator, members with similar interests. We're a very helpful group that generally responds in a timely matter with specific info that has truly helped locate people. Very little 'off topic' info (unless someone is simply asking where/how they should further their genealogical search).</td>
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<td>34. Frequent participation by members, joining of new members to change the mix, patience, respect, staying on topic, avoiding disagreeable political or other comments that provoke disagreeable response, and escalate, efficient moderators.</td>
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<td>✓</td>
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<td>35. For groups like &lt;name of online community&gt;, having a moderator who screens people who want to join and blocks offensive posts.</td>
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<td>36. I think the things that make online communities successful are a welcoming environment, respect for other members, even when you disagree, and self moderation so a moderator doesn't feel inclined to censor members.</td>
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<td>✓</td>
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<td>37. It is that people have common interests and enjoy learning from each other.</td>
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<td>38.</td>
<td>Our online community, &lt;name of online community&gt;, brings parents together who would otherwise not be able to meet in person. &lt;Description of issue&gt; is something only a selected group of people understand. Typically, any problem I am encountering has been encountered by someone else so there is always someone who can offer advice or support. It is the one place you can let out all your feelings without fear of judgement. I have never joined an online forum before but this has been my lifeline.</td>
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<td>39.</td>
<td>I think the most successful are those that have contributing members who care equally about themselves and what they have to gain from the community as well as offering their own skills, knowledge or resources. I am a member of several Ning communities and only one of them operates brilliant and it is for this reason. As well as others openly appreciating and acknowledging what members contribute regardless of whether or not the content is useful for them.</td>
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<td>40.</td>
<td>&lt;name of online community&gt; is successful because of case-study and group discussion</td>
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<td>41.</td>
<td>common interest</td>
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<td>42.</td>
<td>willingness to both give and take...............you may not always be totally correct, but should be willing to learn from others or have your information updated / adjusted; rarely is it dismissed.</td>
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<td>43.</td>
<td>I started what is now a long-running group more than ten years ago (before the web)...Our list revolves around &lt;topic&gt;, but it has truly been life-changing for me and many involved. Many people have met as friends, some as lovers, some have been inspired to learn a language, many to travel. Others have found their calling &lt;description of areas&gt; encouraged by 'the list.' There has been drama over the years. There is when you gather 'strangers. &lt;A range of people described&gt;. But we've worked through our problems and mostly, it's a joy to run and participate in our online group.</td>
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<td>44.</td>
<td>The moderator is one of the most important parts of a successful online community. An active moderator keeps the community pleasant, whereas, in a mostly unmoderated online community, the natives get restless.</td>
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<td>45.</td>
<td>shared interests/work. good source of information and contacts. but i think, for me, it is only the shared interests that makes it successful. there is little social interaction - though there is a common bond in openness/sharing.</td>
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<td>46.</td>
<td>Being able to connect with others who share that particular interest. Especially, if finding people of a like mind locally is difficult. Also, the increase of people from very diverse places adds interest from their contributions.</td>
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<td>47.</td>
<td>We love &lt;name of online community&gt; and are grateful for &lt;name of person&gt; for creating this wonderful medium to exchange information and ideas and meet people all across the globe.</td>
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<td>48.</td>
<td>A good group of people who don't undermine other people's opinions or ideas.</td>
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<td>✓</td>
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<td>49.</td>
<td>I don't actively participate in the community but I find it interesting - particularly when people express their opinions about something which happened in &lt;topic&gt;. I think reading about other people's interpretations of &lt;topic&gt; very interesting and for me mentally stimulating.</td>
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<td>50.</td>
<td>This is a difficult question. I would venture to say that online communities are the most successful when there is respect among members for one another. I've been on group where this was not true, and I've usually left those behind. I'm a member of &lt;name of online application&gt; with well over 2200 friends-- and I know 95% of the people personally, so that form of online community is very important to me also. I would have to say that whether it's Facebook, Ning, or yahoo groups (or something similar, like googlegroups)--the best online communities come about when people share goals, and when people have a common respect for one another.</td>
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<td>51.</td>
<td>members of online communities find and share other useful websites better than searching individually. Have found people very willing to share information and help with sources of further information. Individually no one could search and fine all of the useful information and research that the great numbers of member can.</td>
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<td>✓</td>
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<td>52.</td>
<td>The best thing about the online groups is that we all help each other -- and the collective experience and knowledge of all the members is amazing -- whatever you need help with, there's always <em>somebody</em> who can help you.</td>
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<td>53.</td>
<td>A common interest Interest in helping others Desire to learn Tolerance/ability to ignore Substance (I belong to the &lt;name of online community&gt;, where laymen as well as those with professional experience and knowledge about a wide range of subjects.) It's interesting to read even when I don't need the knowledge personally.</td>
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<td>54.</td>
<td>Some of the questions were not relevant to my association with online communities. In all of my online communities I tend to be a lurker, but am happy to contribute when I feel, believe or know something pertinent.</td>
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<td>55.</td>
<td>The best online communities have some sort of kindness and respect policy and reasonable moderators. This is seldom the case in a sports-based online community where personal attacks are common—especially males telling females how stupid they are, how they cannot possibly know anything about hockey, or football, or horse racing, or baseball, etc. I wonder if it's a male versus female thing ... the groups I belong to &lt;details provide&gt; are populated by mostly females.</td>
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<td>56.</td>
<td>The best online communities have some sort of kindness and respect policy and reasonable moderators. This is seldom the case in a sports-based online community where personal attacks are common—especially males telling females how stupid they are, how they cannot possibly know anything about hockey, or football, or horse racing, or baseball, etc. I wonder if it's a male versus female thing ... the groups I belong to &lt;details provide&gt; are populated by mostly females.</td>
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<td>57.</td>
<td>Good leadership, however not too dominant. Everyone must have the right to present an opinion (politely) without any rudeness in return (especially from the leader/group owner). If a matter is raised which would be of interest to many on the group, replies should go to the group rather than only the individual. As far as feasible, members should be unmoderated .... no delays, also no censoring of whose post goes through &lt; detail provided&gt;. Content should be kept to the theme of what the group relates to &lt;details provided&gt;. A great deal comes back to the quality of the moderation ...... if that is done well initially (democratic, but firm and then later with clear interventions only when required as a reminder e.g. 'Please trim your tails.' 'This subject is now closed') then the group tends to be self-perpetuating and satisfying.</td>
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<td>58.</td>
<td>Providing the power of many people with many experiences giving input -ie I'm member of various groups for &lt;topic&gt; &lt;Detail provided&gt;. &lt;Name of online community&gt; is unique in that you can get opinions from &lt;topic&gt; professionals and is very valuable for second opinions, general knowledge and availability in off hours.</td>
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<td>59.</td>
<td>Common interests.</td>
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<td>60.</td>
<td>I find that a safe environment (moderated) makes the group more successful, and that free expression of emotions, fears, worries, are able to help others know they are not alone.</td>
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<td>61.</td>
<td>You have to feel like you 'click' with the other people - in &lt;name of online application&gt; they are mainly your friends anyway</td>
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<td>✓</td>
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<td>62.</td>
<td>This really depends on what you're looking for in an online community. I use &lt;name of online application&gt; to keep in touch with old friends but have found that there is actually less personal contact through the site compared to direct emails. I have been struck by how trivial and banal the comments people choose to post are and find it a much less satisfying way of keeping in contact. I am also aware that &lt;name of online application&gt; is a commercial business (it is not simply a service to enable online community) which gathers the information people provide through the site for the purposes of direct marketing (and who knows what else!!) and am therefore reluctant to reveal much about myself online. For me &lt;name of online application&gt; will never be a 'successful' online community as it is driven by commercial objectives which will always constrain the information that I will divulge. Nothing beats face to face, real time, real life friendships and community!</td>
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<td>63.</td>
<td>It is the choice of involvement, whether involvement means participation or observation. It is also the openness of the involvement that does not require any type of accreditation or professionalism to warrant membership.</td>
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<td>64.</td>
<td>Easy to communicate over long distances (even between continents). Meet people I would not otherwise meet, because of location or time or area of interest (such as Face Book)</td>
<td>✓</td>
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<td>65.</td>
<td>There appears to be knowledgeable people involved on the group &quot;specific professions listed&quot;</td>
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<td>66.</td>
<td>My only reason for joining online discussion groups - and the only reason I remain in them -- is to get information related to &quot;topic&quot;. The social aspects and emotional support are appreciated, but not why I'm there. I suspect this is true for most of the members in my groups.</td>
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<td>67</td>
<td>My answers are based on a small research group… but my answers would be different if the group was large and on another topic. Successful communities adhere to the principles outlined by Wenger - passion about a particular domain/subject, commitment to sharing practice, belief that social learning can achieve more than individual learning. Successful communities of practice (please note the distinction between community and CoP) need leadership.</td>
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<td>68</td>
<td>it's good to have some guidelines that can be enforced by the group owners/moderators. For example, no flaming or spamming allowed under penalty of being banned. It also comes in handy to have new members moderated because sometimes they send spam for the first message, and if they're moderated, then the spam never reaches the group. These are very common rules, but they aren't always enforced well enough. Been there; done that!</td>
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<tr>
<td>69.</td>
<td>1) There must be a strong core of good persons who post to the community and respond to postings. Most people only read. In the Italian group there are only about 10 people out of a couple of thousand who post regularly. 2) There must be a strong moderator who does not permit disruptive, rude people to continue to be members of the list. There is nothing that chills the conversation more than an expectation that if one does post a message, it is possible that it will be greeted with an insult.</td>
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<td>70.</td>
<td>As with any other social group, a willingness to help and share others within the group as well as honest communication and consideration for the feelings of others are major components in the success of an online community.</td>
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<td>71.</td>
<td>not that I can think of</td>
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<td>72.</td>
<td>Our group is composed of a great group of teachers who are willing to share their ideas and strategies with everyone. I've gotten so many good ideas from the members, which has improved my teaching over the years.</td>
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<tr>
<td>73.</td>
<td>I belong to two &lt;name of online applications&gt; groups and a couple of &lt;name of online application&gt; groups. Each are successful because of the willingness of the participants to share information and resources and because we all have a common job related interest. I've never stuck to a group that was not job related except &lt;name of online application&gt;. I look at &lt;name of online application&gt; 3-4 times per month. It doesn't hold a candle to the interest I have in my other groups.</td>
<td>✓</td>
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<td>74.</td>
<td>&lt;name of online application&gt; online community is a great way to network across the nation in your particular organisation.</td>
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<td>75.</td>
<td>Shared experiences and shared history is critical.</td>
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<td></td>
<td>✓</td>
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<tr>
<td>76.</td>
<td>I think it generally constructive if a community has some rules and sees that members tend to follow them. It helps create a safer place where members can express themselves appropriately and other members do not feel abused. There also need to be options for privacy, since not all communities want to be publicly visible to all. And it helps if there is a way to contact someone with some authority if there are serious problems. On many, if not most, social networking sites this is often very difficult, if not impossible. And many sites are making it more and more difficult, which is especially frustrating when there are technical problems.</td>
<td></td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td></td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
<td>Concerns (eg privacy)</td>
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<tr>
<td>77.</td>
<td>ease of use, responsiveness to suggestions by group members for new features, staying respectful of each other, providing on-topic forums and information.</td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>78.</td>
<td>moderation preventing spam and flame wars, politeness, a topic of concentration.</td>
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<td></td>
<td>✓</td>
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</tr>
<tr>
<td>79.</td>
<td>I thoroughly enjoy being able to interact with people from different areas of my country and the world, who share my esoteric interests, and whom otherwise I probably would never get to know. Through the online communities I have gained new dear friends in my geographic community, again people whom I would probably never have met otherwise. Although, of course, there are some egocentric individuals in every community, geographic as well as on-line, for whom each gathering is a chance to loudly proclaim their (often erroneous) opinion and refuse to listen in reciprocity, the online communities I belong to have been eager to gently educate in order to share and increase enthusiasm. But the moderators have been able to ban rude individuals that attack personally. This is different from 'real/physical' gatherings, I think, where members seems more inclined to leave the group rather than confront such members.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments (Continued)</td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
<td>Concerns eg privacy</td>
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<tr>
<td>80.</td>
<td>&lt;name of online application&gt; helps me to keep up with what my daughters are doing and alerts me to prayer needs from others in my community.</td>
<td>✓</td>
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<tr>
<td>81.</td>
<td>The question about whether or not participating in the online community gains me respect isn't valid. How do I know what others think? I know that they find my advice/answers useful but that doesn't translate in to respect. It would have been a more valid question if you had asked if I respect those in the online community who answer my questions. And that depends on if they're being helpful or snarky about it. The most common shared characteristic of online communities &lt;specific details provided&gt; is a willingness to treat interactions with others as if you will meet them face to face one day in the future and will be called to account for your actions and speech.</td>
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<td></td>
<td>✓</td>
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<tr>
<td>82.</td>
<td>In the best and long lasting groups there are a few rules and those rules are enforced by the moderator.</td>
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<td></td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>83.</td>
<td>I find that the level of respect for some people's opinions is lacking. In some on-line communities, opinions are disparaged by other members. Too bad as it's a great way to share information and knowledge.</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comments (Continued)</td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
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<tr>
<td>84.</td>
<td>The online community is mainly about &lt;specific topics&gt; etc. soft values. When my first child was born 2003 it was very important important to me. Now I have two more kids and very little time for internet. And, with more experience I don’t have so much need for support as a parent... :)</td>
<td>✓</td>
<td></td>
<td>✓</td>
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</tr>
<tr>
<td>85.</td>
<td>Success informing a cohesive group is almost entirely the result of the individuals in the specific group. If people aren't the type to feel they are part of something and to adjust their behavior to help keep it working, it will fail. The format is a very close second; if the format leads to short outbursts (&lt;name of online application&gt;), it's harder to keep a coherent communication going and it becomes disjointed. Longer posting formats that stay in place allow real conversations to happen. Threading is important; the old Usenet format allowed a thread to continue even when the subject line changed, so discussions could wander along, divide into multiple strands and rejoin, with many participants. It's much harder to do that with the current &lt;name of online application&gt; format that displays as a linear thread, but it's technically possible. (On Usenet it was possible to jump to different strands with a visual map of which strand you were on.) (continued next page)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments (Continued)</td>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>Access to information, expertise, ideas &amp; support</td>
<td>Access to new contacts</td>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>Member sense that community has rules and boundaries</td>
<td>Member sense of involvement through participation and/or observation</td>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>Misc.</td>
<td>Concerns eg privacy</td>
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<tr>
<td></td>
<td>Without threading you are utterly dependent on the subject line. Google groups is basically useless to me because their Subject-only threading cuts a discussion off if the subject shifts, with no way to find the next comment. Some groups need to stay firmly on-topic, and moderation helps, while others work best when topics are allowed to change freely. Some blogs have developed a kind of ‘community of the comments’ but the format makes it really hard to develop further.</td>
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</tr>
<tr>
<td>86.</td>
<td>Successful online communities encourage and develop the personal reputations of members, in various ways. When online, personal reputation means everything. Honor lives in successful online communities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>87.</td>
<td>If the members are supportive of one another, even if you don't have much factual data or information otherwise to contribute, the support is helpful and useful to one another.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>88.</td>
<td>Willingness to share their information, expertise and lesson plans (teachers).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
While a total of eighty-eight people responded to the open ended question, twenty-two thought that an online community would be successful if the members had a sense of involvement, through either participation or observation. Twenty thought that it was important for members to share a common interest or circumstance. Twenty-three was also argued that access to information, expertise, ideas and support was essential to online community success. While nineteen respondents indicated that ease of communication influenced the success of online communities, others adopted a very different perspective. They chose to highlight the importance of members knowing that there are rules and boundaries within an online community ($n = 17$).

A total of twenty-one people thought that a ‘positive’ online environment was an important ingredient of success. It was noted that timely responses to posts and a sense that diverse opinions, were respected were indicative of a positive online environment.

Table 8.2 shows the frequency distribution of the responses to the question; ‘what makes online communities successful?’ The distribution was across nine categories. Eighty eight people responded to the question. Several answers were categorised under more than one category.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to information, expertise, ideas &amp; support</td>
<td>23</td>
</tr>
<tr>
<td>Member sense of involvement: through participation and/or observation</td>
<td>22</td>
</tr>
<tr>
<td>Member sense that environment is positive (eg. Diverse opinions respected and timely responses to posts)</td>
<td>21</td>
</tr>
<tr>
<td>Member sense of shared circumstances / interests / purpose</td>
<td>20</td>
</tr>
<tr>
<td>Ease of communication locally and globally (eg. family, friends, colleagues)</td>
<td>19</td>
</tr>
<tr>
<td>Member sense that community has rules and boundaries</td>
<td>17</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>12</td>
</tr>
<tr>
<td>Concerns eg privacy</td>
<td>7</td>
</tr>
<tr>
<td>Access to new contacts</td>
<td>6</td>
</tr>
</tbody>
</table>
Access to information, member sense of involvement, member sense that the environment is positive and member sense of shared circumstances were the thought to be the most important factors in determining the success of an online community. These observations complement the findings of this thesis.

8.5 RELIABILITY ANALYSIS

The Cronbach’s Alpha for each construct was calculated to check the reliability of the scales. The calculation also provided a baseline for the analysis of internal consistencies. The Cronbach’s Alpha for each construct is displayed in Table 8.3: Reliability Statistics. All constructs were found to have a Cronbach’s Alpha higher than 0.6. The results suggested that the items consistently measured the constructs and were suitable inclusions in the final scales (Nunnally 1978).

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha based on standardised items</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information quality (IQ)</td>
<td>.805</td>
<td>.814</td>
<td>4</td>
</tr>
<tr>
<td>System quality (SQ)</td>
<td>.606</td>
<td>.621</td>
<td>3</td>
</tr>
<tr>
<td>Member satisfaction (MS)</td>
<td>.658</td>
<td>.666</td>
<td>3</td>
</tr>
<tr>
<td>Sense of belonging (SB)</td>
<td>.794</td>
<td>.798</td>
<td>4</td>
</tr>
<tr>
<td>Trust (TR)</td>
<td>.680</td>
<td>.688</td>
<td>4</td>
</tr>
<tr>
<td>Social usefulness (SU)</td>
<td>.771</td>
<td>.779</td>
<td>4</td>
</tr>
<tr>
<td>Member loyalty (ML)</td>
<td>.775</td>
<td>.804</td>
<td>4</td>
</tr>
</tbody>
</table>

An inter-item correlation matrix was also created for each construct to determine how highly the items correlated with each other. The results are displayed in Appendix F.
When the items displayed in Table 8.4 were removed from the scale, the value of the Cronbach’s Alpha of the three constructs, system quality, trust and member satisfaction improved. The higher values indicated that the remaining items were a stronger, truer reflection of the meaning of the constructs than those which had been removed.

### Table 8.4: Inconsistent assessment items

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>System quality</td>
<td>SQ4</td>
<td>I use the internet for a variety of purposes.</td>
</tr>
<tr>
<td>Trust</td>
<td>TR3</td>
<td>The other online community members are only concerned about themselves.</td>
</tr>
<tr>
<td>Member satisfaction</td>
<td>MS3</td>
<td>Using the online community helps to satisfy my social needs.</td>
</tr>
</tbody>
</table>

The three assessment items were subsequently removed from further analysis. Before subjecting the data to further analysis, the data set was checked to ensure that all assessment items were coded in the same direction. The three assessment items that were reverse-coded were recoded to ensure reporting consistency.
CHAPTER 9

STATUS OF HYPOTHESES

9.1 CHAPTER OVERVIEW

The previous chapter outlined the research methodology and the preliminary data analysis. The purpose of this chapter is to detail and analyse the research results in relation to the set of hypotheses to be tested.

9.2 DATA ANALYSIS METHOD

The modified virtual community success model was tested using a causal modeling technique called the Partial Least Squares (PLS) method. PLS was considered to be well suited to deal with small data samples, unlike other causal modeling approaches such as LISREL (Hulland, 1999).

The method was also thought to be an appropriate choice because of its ability to distinguish between two components of the causal model: the ‘structural’ model and the ‘measurement’ model (Iivari 2005). Iivari (2005) argued that, when combined, the models formed a ‘network of constructs and measures.’

The structural model was comprised of the unobservable latent constructs and the theoretical relationships between them. The calculation of the path coefficients enabled the strengths of the relationships between the independent and the dependent variables to be determined (Iivari 2005) and the hypothesised relationships to be assessed.

The measurement model was comprised of the observed items and the latent constructs that they measured (Iivari 2005). Each latent construct was measured by multiple items. The calculation of the item weightings enabled the relationship between the item and the latent construct that it measured to be determined. This, in turn, enabled the applicability of the measurement model to be assessed.
Hulland (1999) suggested that researchers make distinct separations between the constructs and the measures to enable the suitability of each to be fully tested. He also suggested that the $R^2$ values of the dependent constructs be examined, to determine to what extent variances in the construct could be explained by the model.

9.3 HYPOTHESIS 1

![Figure 9.1: Causality schema - Information quality and member satisfaction](image)

**Hypothesis 1: Individuals who are satisfied with the quality of the content are more likely to be satisfied with the community.**

The construct ‘information quality’ (IQ), as shown in Figure 9.1, is an independent variable. Lin (2008) described information quality as measuring semantic success. For the purposes of this research, the construct was measured empirically, in terms of the accuracy of information, the currency of information, the relevance of information and the format of content.

Using PLS, the measurement items were tested to determine if they were suitable measures of the construct. The resultant parameters for both the links between the measures and their respective constructs are known as loadings (Hulland 1999).
The loadings for items measuring information quality ranged from 0.780 to 0.818. Hulland (1999) recommended as a ‘rule of thumb’ that researchers accept loadings of 0.7 or more, on the basis that a loading greater than 0.7 suggests more shared variance between the construct and its measure than error variance.

While all factors measured were found to significantly influence a member’s perception of information quality, relevance of information was found to be the most influential factor in the determination of information quality with a loading of 0.818. The member’s perception of how accurate the information being provided also influenced the determination of information quality, with a loading of 0.804. Currency of information provided was found to be slightly less influential, with a loading of 0.799. The format of information provided was found to be the least significant factor in the determination of information quality, with the loading of the measurement item being 0.780.

The construct ‘member satisfaction’ (MS), as shown in Figure 9.1, is a dependent variable. It is depicted as being dependent on information quality. In broad terms, the construct ‘member satisfaction’ measured a members’ opinions of an online community. More specifically, it measured member satisfaction, in terms of overall satisfaction and the handling of information needs.

A member’s sense of overall satisfaction with the community was found to be the most influential factor in the determination of member satisfaction. The loading of the measurement item was 0.910. The perception that the member’s information needs were being met was also found to be important in the determination of overall satisfaction with the online community. The loading of the measurement item was 0.811.

While two of the three item loadings for member satisfaction were greater than 0.7, the loading of the third measurement item was 0.559. The fact that the item was reverse-coded may have contributed to the discrepancy, since negatively worded, reverse-coded items have been known to sway statistical outcomes (Barnette 2000). The item which measured overall satisfaction was retained on the basis that Hulland (1999) advised researchers to drop off items that had loadings of less than 0.4 or 0.5 and it had a loading above the threshold.
The model as shown in Figure 9.1, accounted for 26% of the variance in member satisfaction. The $R^2$ value for member satisfaction was 0.259. In addition, the hypothesised relationship between information quality and member satisfaction, with a path coefficient of 0.509, was found to be positive and significant. The findings resonate with Lin's (2008) view that individuals who are satisfied with content quality are more likely to be satisfied with the community.

The research findings supported the hypothesis. Individuals who were satisfied with the quality of the content within the online community were more likely to be satisfied with the online community.

9.4 HYPOTHESIS 2

Figure 9.2: Causality schema - System quality and member satisfaction

Hypothesis 2: Individuals who are satisfied with the quality of the online application are more likely to be satisfied with the community.

The construct ‘system quality’ (SQ) as displayed in Figure 9.2, is an independent variable. Lin (2008) linked system quality to technical success. For the purposes of this research, the construct was measured empirically, in terms of reliability, ease of use and response time.
Two of the measurement items had loadings greater than 0.7, and one item had a loading of 0.596. All items were retained, since they were all above the 0.4 or 0.5 threshold commonly used for factor analysis results.

Response time was found to be the most influential factor in determining system quality, since the loading of the measurement item was 0.839. Ease of access was also found to be a strong influence with a loading of 0.735. While the reliability of the system was also a strong influence, it was found to be the least important of the three factors assessed, given that the loading of the measurement item was 0.596. Hulland (1999) observed that it is common for researchers to find that several measurement items have loadings below 0.7.

The construct ‘member satisfaction’ (MS), as displayed in Figure 9.2, is a dependent variable. It is depicted as being dependent on system quality. As previously stated, in broad terms, the construct measured members’ opinions of the online community. More specifically, it was measured empirically, in terms of overall satisfaction and the handling of information needs.

The loadings for items measuring member satisfaction ranged from 0.582 to 0.903. Given that none of the loadings were below the 0.4 or 0.5 threshold, all measurement items were retained. A member’s perception that their information needs were being met was found to be influential in determining their overall satisfaction with the community. The loading of the measurement item was 0.807. A sense of overall satisfaction with the community, however, was found to be the most influential determinant of member satisfaction with a loading of 0.903. The second assessment item, which measured overall satisfaction, was found to be comparatively less influential but still significant. The loading of the measurement item was 0.582. The fact that the item that proved to be less influential was reverse-coded might, at least in part, explain the discrepancy. Negatively worded, reverse-coded items have been used extensively by researchers as a guard against compliant behaviours, but their potential to negatively impact statistical outcomes has been well documented (Barnette 2000).

The hypothesised path between system quality and member satisfaction, with a path coefficient of 0.512, was found to be positive and significant. The findings support
Lin’s (2008) view that system quality influences member satisfaction. More specifically, the model as shown Figure 9.2 accounted for 26% of the variance in member satisfaction, since the $R^2$ value for member satisfaction was 0.262.

The research findings supported the hypothesis. Individuals who were satisfied with the quality of the system within the online community were more likely to be satisfied with the online community.

9.5 HYPOTHESIS 3

Figure 9.3: Causality schema - Sense of belonging and member satisfaction

Hypothesis 3: Individuals who have a sense of belonging within the online community are more likely to be satisfied with the community.

The construct ‘sense of belonging’ (SB), as displayed in Figure 9.3, is an independent variable. Lin (2008) considered that a sense of belonging within online communities was important to encourage participation. She maintained that without a sense of belonging there would be no participation or involvement.

In accordance with the work of Lin (2008), the construct ‘sense of belonging’ was measured in terms of how strongly members felt that they were a part of the online community. More specifically, it was measured empirically, in terms of member involvement, commitment, affinity with the community and sense of community.
morale. All factors measured were found to influence a member’s sense of belonging within the online community.

The loadings for items measuring sense of belonging ranged from 0.581 to 0.864. Given that none of the loadings were below the 0.4 or 0.5 threshold, all measurement items were retained.

A sense of commitment to the online community was found to be the most influential factor in the determination of a sense of belonging, since the loading of the measurement item was 0.864. Respondent identification or affinity with the community was also found to be a strong influence, given that the loading of the measurement item was 0.869. A sense of enjoyment derived from being involved in the online community was slightly less influential. The loading of the measurement item was 0.851. The morale of other online community members was found to be the least influential factor in the determination of a sense of belonging, since the loading of the measurement item was 0.581.

The construct ‘member satisfaction’ (MS), as displayed in Figure 9.3, is a dependent variable. It is depicted as being dependent on sense of belonging. As previously stated, in broad terms, the construct measured members’ opinions of the online community. More specifically, it was measured empirically, in terms of overall satisfaction and the handling of information needs.

A sense of overall satisfaction with the community was found to be the most influential determinant of member satisfaction, since the loading of the measurement item was 0.899. The second assessment item, which measured overall satisfaction, was found to be comparatively less influential but still significant. The loading of the measurement item was 0.628. The second assessment item was reverse-coded which may, in part, account for the slight variation.

A member’s perception that their information needs were being met was also found to be influential in the determination of overall satisfaction with the online community. The loading of the measurement item was 0.781.
The model, as shown Figure 9.3, accounted for 49% of the variance in member satisfaction since the $R^2$ value for member satisfaction was 0.488. In addition, the hypothesised path between sense of belonging and member satisfaction, with a path coefficient of 0.698, was found to be positive and significant.

The research findings supported the hypothesis. Individuals who had a sense of belonging within the online community were more likely to be satisfied with the online community.

9.6 HYPOTHESIS 4

Figure 9.4: Causality schema - Member satisfaction and member loyalty

Hypothesis 4: Individuals who are satisfied with the community are more likely to feel a sense of loyalty towards the online community.

The construct ‘member satisfaction’ (MS) is displayed, in Figure 9.4, as an independent variable. As previously stated, the construct measured members’ opinions of the online community. More specifically, it was measured empirically in terms of overall satisfaction and the handling of information needs. All factors measured were found to influence a member’s sense of satisfaction with the online community.

A sense of overall satisfaction with the community was found to be the strongest determinant of member satisfaction, since the loading of the measurement item was 0.903. A second assessment item that measured overall satisfaction was found to be comparatively less influential but still significant, with a loading of 0.635. The fact that
the item was reverse-coded might, at least in part, explain the discrepancy between figures. As previously stated, negatively worded, reverse-coded items have been known to negatively impact statistical outcomes (Barnette 2000). A member’s perception that their information needs were being met was also found to be influential in the determination of overall satisfaction with the online community. The loading of the measurement item was 0.770.

‘Member loyalty’ (ML), as displayed in Figure 9.4, is a dependent variable. It is depicted as being dependent on member satisfaction. Lin (2008) argued that the stability associated with member loyalty plays a significant role in community expansion. Within the context of this study, the construct ‘member loyalty’ measured participation and behavioural intention. More specifically it was measured empirically, in terms of how willing the respondent was to participate in the community and communicate with other members. It also measured how keen the respondent was to continue participation.

A belief that continued involvement was worthwhile was found to be the most influential determinant of member loyalty. The loading of the measurement item was 0.860. Willingness to continue participation was almost as strong, since the loading of the measurement item of 0.858. A willingness to communicate with other community members was also found to be a significant determinant. The loading of the measurement item was 0.819. A willingness to become involved in operational aspects of the online community was the least significant determinant of member loyalty, given that the loading of the measurement item was 0.615.

The study found that the hypothesised path between member satisfaction and member loyalty was found to be positive and significant. The path coefficient was 0.610. The positive correlation supports the view that a sense of member satisfaction influences a sense of member loyalty.

Member satisfaction was found to be directly and positively related to member loyalty. More specifically, the model as shown Figure 9.4 accounted for 49% of the variance in member loyalty, since the $R^2$ value for member loyalty was 0.372.
The research findings supported the hypothesis. Individuals who were satisfied with the community were more likely to feel a sense of loyalty towards the online community.

9.7 HYPOTHESIS 5

Figure 9.5: Causality schema - Sense of belonging and member loyalty

Hypothesis 5: Individuals who have a sense of belonging within the online community are more likely to have a sense of loyalty towards the online community.

‘Sense of belonging’ (SB) is displayed, in Figure 9.5, as an independent variable. As previously stated, the construct was measured in terms of how strongly members felt that they were a part of the online community. More specifically, it was measured empirically in terms of member involvement, commitment, affinity with the online community and a sense of community morale. All factors measured were found to influence a member’s sense of belonging within an online community.

A sense of commitment to the online community was found to be the most influential factor in the determination of a sense of belonging, since the loading of the measurement item was 0.880. A sense of affinity with the online community was also found to be a strong influence, with a loading of 0.860. A sense of enjoyment gained from being involved in the online community was slightly less influential, given that the loading of the measurement item was 0.818. The morale of the online community was
found to be the least influential factor in the determination of a sense of belonging. The loading of the measurement item was 0.596.

‘Member loyalty’ (ML), as displayed in Figure 9.5, is a dependent variable. It is depicted as being dependent on sense of belonging. As previously stated, within the context of this study, the construct ‘member loyalty’ measured participation and behavioural intention. More specifically, it was measured empirically in terms of how willing the respondent was to participate in the community and communicate with other members. It also measured how keen the respondent was to continue participation.

A belief that continued involvement was worthwhile was found to be the most influential determinant of member loyalty. The loading of the measurement item was 0.843. Willingness to continue participation was almost as influential. The loading of the measurement item was 0.839. A willingness to communicate with other community members was also found to be a significant determinant. The loading of the measurement item was 0.832. A willingness to become involved in operational aspects of the online community was the least significant determinant of member loyalty. The loading of the measurement item was 0.654.

The research found that the hypothesised path between sense of belonging and member loyalty was positive and significant. The path coefficient was 0.750. The findings support the view that a member’s sense of belonging influences their sense of member loyalty. Sense of belonging was found to be directly and positively related to member loyalty. More specifically, the model as shown in Figure 9.5 accounted for 56% of the variance in member loyalty, given that the R² value for member loyalty was 0.562.

The research findings supported the hypothesis. Individuals who had a sense of belonging within the online community were more likely to have a sense of loyalty towards the online community.
9.8 HYPOTHESIS 6

Figure 9.6: Causality schema - Trust and sense of belonging

Hypothesis 6: Individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community.

‘Trust’ is displayed, in Figure 9.6, as an independent variable. Lin (2008) stressed the importance of a sense of trust existing among community members. She argued that individuals who trust other community members are more likely to feel like they belong to the online community. For the purposes of this research, the construct measured empirically the integrity of the collective entity. It also measured the respondent’s perception of the abilities of the other online community members, as well as their perception of their own abilities. All factors measured were found to significantly influence a member’s sense of trust within an online community.

The respondent’s perception of the abilities of the other community members was to be the most influential factor in the determination of a sense of trust. The loading of the measurement item was 0.863. A sense of integrity in the way members deal with each other was also found to be a strong influence, with a loading of 0.740. A second assessment item, that was reverse-coded, also found integrity within the online community to be an influential factor in the determination of a sense of trust. The loading of the measurement item was 0.637. The respondent’s perception of their own
abilities was the least influential factor in the determination of a sense of trust, given that loading of the measurement item was 0.615.

‘Sense of belonging’ (SB), as displayed in Figure 9.6, is a dependent variable. It is depicted as being dependent on trust. As previously stated, within the context of this study, sense of belonging was measured in terms of how strongly members felt that they were a part of the online community. More specifically, it was measured empirically, in terms of member involvement, commitment, affinity with the online community and a sense of community morale.

A sense of affinity with the online community was found to be the most influential factor in the determination of a sense of belonging, since the loading of the measurement item was 0.859. A sense of commitment to the online community was also found to be a strong influence, with a loading of 0.856. A sense of enjoyment at being involved in the online community was slightly less influential, with a loading of 0.846. The morale of the online community was found to be the least influential factor in the determination of a sense of belonging, given that the loading of the measurement item was 0.588.

The research also found that the hypothesised path between trust and sense of belonging was positive and significant. The path coefficient was 0.579. The findings support the view that a member’s sense of trust among members within an online community influences their sense of belonging. Trust was found to be directly and positively related to sense of belonging. More specifically, the model as shown Figure 9.6 accounted for 34% of the variance in member loyalty. The $R^2$ value for member loyalty was 0.335.

The research findings definitely supported the hypothesis. Individuals who thought that there was a sense of trust within the online community were more likely to have felt a sense of belonging within the online community.
HYPOTHESIS 7

Figure 9.7: Causality schema - Social usefulness and sense of belonging

Hypothesis 7: Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.

‘Social usefulness’ (SU) is displayed, in Figure 9.7, as an independent variable. Lin (2008) linked social usefulness to the culture of the online community. She posited that individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community. As such, Lin (2008) expected her research results to indicate that social usefulness influenced sense of belonging. Instead, she found the influence to be insignificant. There was a significant mismatch between her expectations and her research results.

For the purposes of this research, the construct ‘social usefulness’ was measured empirically, in terms of usefulness, worthiness, enablement of knowledge sharing and attendance to social needs. All factors measured were found to have a significant influence on the determination of social usefulness, since the loadings of all the measurement items were greater than 0.73. Hulland (1999) suggested that such strong loadings link individual measurement items closely to the associated construct.

The findings indicated that the sharing of knowledge within an online community is the strongest influence in the determination of social usefulness, since the loading of the measurement item was 0.847. Attendance to social needs proved to be the next most
significant determinant, given that the loading of the measurement item was 0.779. The respondent’s sense of how worthwhile it was to use the online community was slightly less influential. The loading of the measurement item was 0.751. The respondent’s perception of how useful it was to be a member was the least influential determinant of social usefulness, given that the loading of the measurement item was 0.725.

‘Sense of belonging’ (SB), as displayed in Figure 9.7, is a dependent variable. It is depicted as being dependent on social usefulness. As previously stated, within the context of this study, sense of belonging was measured in terms of how strongly members felt that they were a part of the online community. More specifically, it was measured empirically, in terms of member involvement, commitment, affinity with the online community and a sense of community morale. All factors measured were found to have a significant influence on the determination of a sense of belonging.

A sense of affinity with the online community was found to be the most influential factor in the determination of a sense of belonging. The loading of the measurement item was 0.895. A sense of commitment to the online community was also found to be a strong influence, with the loading of the measurement item being 0.894. A sense of enjoyment gained from being involved in the online community was slightly less influential, with the loading of the measurement item being 0.822. The morale of the online community was found to be the least influential factor in the determination of a sense of belonging, given that the loading of the measurement item was 0.513.

The research found that the hypothesised path between social usefulness and sense of belonging was positive and significant. The path coefficient was 0.826. The positive correlation supports the view that a member’s sense of how socially useful an online community is influences their sense of belonging.

Social usefulness was found to be directly and positively related to sense of belonging. More specifically, the model as shown Figure 9.7 accounted for 68% of the variance in member loyalty. The $R^2$ value for member loyalty was 0.682.
The research findings definitely supported the hypothesis. Individuals who perceived the online community to be socially useful were more likely to feel a sense of belonging within the online community.

### 9.10 CONCEPTUAL MODEL – RESULTS OF ANALYSIS

**Figure 9.8: Modified virtual community success model – results of analysis**

The modified virtual community success model, as shown in Figure 9.8, includes four independent variables: information quality (IQ), system quality (SQ), trust and social usefulness (SU). It also includes three dependent variables: sense of belonging (SB), member satisfaction (MS) and member loyalty (ML).

Hulland (1999) recommended that researchers include multiple measures for each construct. Within this study, all constructs had at least three associated measurement items. He also referred to the nature of the links between constructs and measures as ‘epistemic relationships’, and suggested that it is important for researchers to consider the relationships between the measures and the constructs. More specifically he advised
researchers to decide whether they thought that the underlying constructs caused (or defined) the observed measures, or whether the measures caused (or defined) the constructs.

Within the context of this study, the measures (or indicators) are considered to have a reflective relationship with the constructs. As such, it is believed that the measures reflect the unobserved, underlying construct, with the construct giving rise to (or causing) the observed measures. Within this context, Hulland (1999) suggested that it is appropriate to consider the reliability of measurement items. In PLS, the individual item reliability is determined by examining the loadings of the measures with their associated construct.

As previously established, all measurement items were found to be reliable. With regard to the model as a whole, 20 of the 26 measurement item loadings were greater than 0.7. In these instances, there were more shared variances between the constructs and their respective measures than error variances. The remaining six item loadings were greater than 0.56. In addition, each construct included in the model had at least two measurement items with loadings above 0.7.

The research findings also provided insights into the relationships between the constructs. Most notably, the strength of the relationship between social usefulness and sense of belonging is highlighted. The path coefficient was 0.727. Trust was also found to make a positive contribution to sense of belonging but, with a path coefficient of 0.163, the relationship was found to be significantly less significant.

Sense of belonging was found to have a significant and direct effect on member loyalty. The relationship between sense of belonging and member loyalty proved to be strong, with a path coefficient of 0.627. Member satisfaction was found to make a much smaller contribution towards member loyalty, with a path coefficient of 0.172.

Another positive relationship was evident between sense of belonging and member satisfaction. The path coefficient was 0.535. Information quality and system quality made less significant contributions towards member satisfaction, with path coefficients of 0.138 and 0.191 respectively.
The findings emphasised the relationship between sense of belonging and member satisfaction. They also stressed the importance of the relationship between sense of belonging and member loyalty. The indirect effect of social usefulness on member loyalty, via sense of belonging, was also highlighted.

To determine the extent to which variances in the constructs could be explained by the model, the $R^2$ values of the dependent constructs were also examined. This approach was recommended by Hulland (1999). The findings were significant. The $R^2$ value of member satisfaction was 0.537. The $R^2$ value of sense of belonging was 0.688 and the $R^2$ value of member satisfaction was 0.537. The $R^2$ values suggested that the modified virtual community success model, as shown in Figure 9.8, accounted for 69% of variances in sense of belonging, 54% of variances in member satisfaction and 57% of variances in member loyalty.

Based on the results of the analysis, including the $R^2$ values of the dependent constructs and the strength of the path coefficients, two predictions could be applied to the general population. Firstly, that a member’s sense of loyalty to an online community is directly related to their sense of belonging within the community. Secondly, that a member’s sense of loyalty to an online community is indirectly (via a member’s sense of belonging) related to how socially useful the members think that the group is to them. However a sampling frame that accurately reflects the general population would be necessary if the two predictions were to be fully tested.
CHAPTER 10

CONCLUSIONS

10.1 CHAPTER OVERVIEW

This chapter documents the conclusions regarding the research problem, including the status of each hypothesis tested. The chapter also states research limitations and the implications for future research.

10.2 CONCLUSIONS REGARDING THE RESEARCH PROBLEM

The conceptual model demonstrates that the notion of online community success is a multidimensional concept with causal relationships between the dimensions. The constructs ‘system quality’ and ‘information quality’ and their hypothesised relationships with member satisfaction were derived from theory and research focused on information systems within ecommerce environments. The constructs, ‘trust’, ‘social usefulness’ and ‘sense of belonging’ and their hypothesised relationships, were drawn from theory and research focused on people-to-people interactions within the community context. The construct, ‘member loyalty’, originated from the marketing concept of brand loyalty. It follows that the findings of this research should be pertinent to both the community and commercial sectors. The findings should also be equally relevant within online and offline contexts. This section presents the research findings.

10.2.1 SENSE OF BELONGING INFLUENCES MEMBER SATISFACTION

There were similarities and differences between the findings of this study and the work of Lin (2008). Most notably, Lin (2008) held the view that system characteristics determined member satisfaction. This perspective was consistent with the view of DeLone and McLean (2003). The findings of this study, however, also highlighted the significant impact of sense of belonging on member satisfaction.
Lin (2008) also assumed that member satisfaction influenced sense of belonging. This research found the reverse to be true. This study found that individuals who have a sense of belonging within the online community are more likely to be satisfied with the community. Moreover, the hypothesised path from sense of belonging to member satisfaction was found to be positive and significant.

10.2.2 SOCIAL USEFULNESS INFLUENCES SENSE OF BELONGING

Lin (2008) assumed that social usefulness influenced sense of belonging. The findings of this study were consistent with this view. Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.

Although the findings of this study supported Lin’s view, her own research did not. Lin (2008) described the results as being unexpected and put forward two possible explanations. Firstly, she posited that the insignificant correlation may have been attributed to sample selection bias. By way of explanation, she argued that most of the respondents in her study were undergraduate students who represented ‘a younger generation engaged in virtual communities to obtain enjoyment, entertainment, amusement and fun’ (Lin 2008, p. 5) Secondly, she noted that most respondents ‘primarily participated to share their common interests, and then to have fun interacting with others’ (Lin 2008, p. 5). She speculated that this was because relationship-building was a consequence of interaction rather than a prime motivator.

The discrepancy in the research findings may be attributed to the age differences of the samples. Only 13% of the respondents in Lin’s (2008) study were over the age of 25 years, while 96% of the participants of the current study were over 25 years. Another explanation could be that the participants in Lin’s (2008) study were all undergraduate students from five business courses at a large university, while the findings of this study were derived from a reasonably well balanced sample of the general population. The discrepancy could also be linked to cultural differences because all of the participants in Lin’s (study) lived in northern Taiwan, while 85% of the respondents of the current study lived in either Australia or the United States of America.
10.2.3 SENSE OF BELONGING INFLUENCES MEMBER LOYALTY

This study also found a significant relationship between sense of belonging and member loyalty. Individuals who have a sense of belonging within the online community were found to be more likely to have a sense of loyalty towards the online community.

10.2.4 TIMELY ACCESS TO INFORMATION FROM TRUSTED SOURCES

The findings of this study suggest that relevant information, provided quickly by people with appropriate expertise in an environment that encourages knowledge sharing, makes it more likely for members to feel a sense of commitment to, and overall satisfaction with, the community. This, in turn, influences the member’s sense that it is worthwhile to continue their participation in the online community.

The implied associations resonate with Wenger’s (1999) observations about ‘communities of practice.’ He argued that the reason why communities of practice existed was so that members could learn from each other and share knowledge and practices. The findings of this study also suggest that the most significant benefit secured through online participation is the timely access to information from trusted sources.

Along similar lines Snyder, Wenger and Briggs (2004) suggested that communities of practice essentially operate as ‘social learning systems.’ They added that the collaborative development and collective sharing of knowledge also has the potential to generate social capital and develop new skills among members.

10.2.5 FINDINGS SUPPORT CONCEPTUAL MODEL

This study concluded that the measurement model was reliable and that the structural model was sound. The research findings in relation to each of hypotheses tested are displayed in Table 10.1: Hypotheses and research findings.
Table 10.1: Hypotheses and research findings

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1: Individuals who are satisfied with the quality of the content are more likely to be satisfied with the community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 2: Individuals who are satisfied with the quality of the online application are more likely to be satisfied with the community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 3: Individuals who have a sense of belonging within the online community are more likely to be satisfied with the community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 4: Individuals who are satisfied with the community are more likely to feel a sense of loyalty towards the online community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 5: Individuals who have a sense of belonging within the online community are more likely to have a sense of loyalty towards the online community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 6: Individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community.</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 7: Individuals who perceive the online community to be socially useful are more likely to feel a sense of belonging within the online community.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

10.3 LIMITATIONS

Within the context of this research several limitations were identified. None of the limitations diminish the significance of the research findings.

The first limitation centred on the notion of deception and the anonymous nature of the online surveys open to members of the public (Kraut et al. 2004). Researchers such as Kraut et al. (2004) expressed a concern that the researcher is not able to visually verify
the age and gender of each participant. Others, such as Royle and Shellhammer (2007), expressed a concern that greater anonymity may result in the expression of more negative comments. While the concerns cannot be totally mitigated, it is noteworthy that Royle and Shellhammer (2007) posited that the anonymity provided online may also encourage responders to be more honest than if they were using more traditional methods.

Another limitation was concerned with distribution. Participants were recruited using a snowballing effect. Once the online surveys were made public the researcher had no control over the distribution of the online survey link and, ultimately, the researcher had no control over the range of people who completed the survey. While some would argue that this encourages very willing participation (Reips, 2004), Kraut et al. (2004) expressed concerns that malicious individuals could inundate the database with useless data that could undermine the integrity of the research.

The research findings of Gosling et al. (2004), on the other hand, suggested that data collected online was not significantly affected by repeat responders or non-serious responders.

However, while potential exposure to deception was unavoidable (Beddows 2008), and the distribution of the online survey link was ultimately out of the control of the researcher, a number of steps were implemented within this research to mitigate the limitations. Firstly, the serious nature of the research was highlighted to prospective participants. Secondly, the survey was configured to exclude from analysis the data of individuals who self-reported that they do not belong to an online community or are under 18 years of age. Thirdly, the researcher only promoted the survey to owners of relatively private communities such as members only, moderated, online groups. Fourthly, prior to subjecting the conceptual model to testing, the data was screened for reliability.

Another possible limitation arose because there is currently no sampling frame which provides a random sample of Internet users (Kraut et al. 2004). As such, some may argue that while the research findings provide valuable insights into the perspectives of a subset of the population, they may not truly represent the opinions of broader
population. With this in mind, the researcher implemented a multiple site entry technique (Reips 2002). A link to the survey and an invitation to participate in the research was distributed, via email, to a range of online community members and owners across a range of applications, including Facebook, Yahoo Groups, Ning and My Connected Community. The survey was also promoted to owners of groups and on discussion boards that were likely to attract different types of participants. However, it should also be noted that when researchers Gosling, Vazire, Srivastava and John (2004) compared data from a self-selected, self-reported online survey with 510 published, more traditional paper-based methods, they found that internet-based data samples were more representative of the general population than data samples derived from more traditional methods.

10.4 IMPLICATIONS FOR MANAGERS OF ONLINE COMMUNITIES

This study investigated the interrelationships between technical and social factors that impact on online community success. The objective was achieved by testing the applicability of a modified version of the virtual community success model developed by Lin (2008).

10.4.1 SENSE OF BELONGING

This study found that the members’ sense of belonging within an online group is critical to the success of an online community. The research findings also indicated that individuals who had a sense of belonging within the online community are more likely to be satisfied with the community. Individuals who had a sense of belonging within the online community were also more likely to have a sense of loyalty towards the online community. As such, it is important for those managing online communities to take steps to encourage members to feel that they are a part of the community.

While a member’s sense of belonging is essentially a perceptual measure, there are a number of strategies that a manager of an online community can implement to foster a sense of belonging within the community. From the point of group creation, for instance, the manager should make sure that new members are presented with a
welcoming environment. An act as simple as sending a welcoming message to new members and inviting them to introduce themselves can contribute to their sense of belonging.

**10.4.2 MEMBER INVOLVEMENT**

The manager should encourage member involvement. For example, nominated members could be allocated responsibilities that assist in the running of the community. If appropriate, members should also be encouraged to make contributions that personalise the online space. This could be achieved, for example, by allowing them to share photographs and link to personal profiles.

The manager should also ensure that the community presents itself as being dynamic. New and existing members will have little, if any, motivation to participate in an online community that appears to be inactive. Managers should be encouraged to monitor group activity so that they are aware when the group is stagnating and can take appropriate action, such as the provision of stimulating content or activities.

**10.4.3 SOCIAL USEFULNESS**

This study found that individuals who perceived the online community to be socially useful were more likely to feel a sense of belonging within the online community. To encourage a sense of social usefulness, the manager should promote activities that encourage members to join in discussions. The research findings suggested that the sharing of knowledge within an online community is critical in the determination of social usefulness. To facilitate knowledge-sharing the manager could, for example, ask more experienced members to mentor new members. The manager could also generate a range of formal and informal opportunities for members to share their knowledge, discuss their areas of interest or engage in more personal exchanges. Not only will the exchanges foster a sense of community and social engagement among members but, in the process, the manager could learn more about the members as individuals. This should, in turn, make it easier for the manager to generate a range of personally relevant experiences for the group.
10.4.4 TRUST
This study found that individuals who think that there is a sense of trust within the online community are more likely to have a sense of belonging within the online community. As previously stated, a sense of belonging was found to be a critical dimension of online community success.

Given the findings, the online community manager is advised to promote levels of trust between members within the group. One way of developing sense of trust is by encouraging the development and maintenance of a positive online environment and by encouraging behavioural integrity between members. Guidance, in the form of rules distributed to new members is one way of setting behavioural boundaries. It is also recommended that the manager ensures that group activities are monitored. The monitoring will provide the manager with opportunities to encourage positive behaviours and respond quickly to inappropriate behaviours.

The findings also indicated that a member’s opinion of the abilities of the other community members influenced their sense of trust. As such, managers should be encouraged to recruit a core number of members with demonstrated, relevant abilities who are willing to participate in the online community.

10.4.5 INFORMATION QUALITY
This study found that member satisfaction can be affected by the quality of the information provided within the community. It was also found that individuals who are satisfied with an online community are more likely to feel a sense of loyalty towards the community. Given that an individual’s sense of loyalty influences their decision to return to the online community, it is important that managers determine the information needs of the members and ensure that these needs are met. In addition, managers of online communities should employ strategies to ensure that the quality of the online content is maintained.

Individuals indicated that they valued content that was accurate, current and relevant to them. They also indicated a preference for well-formatted information. Managers could actively encourage and promote the involvement of relevant recognised experts. They
could also develop ‘knowledge banks’ on relevant topics within the online community. The content could be sourced internally, from group members, or externally.

10.4.6 SYSTEM QUALITY

This study found that member satisfaction can be affected by the quality of the application being used to access an online community. Given that the study also found that an individual’s level of satisfaction influenced their intention to return to the online community, managers would be well advised to utilise an application that is reliable, has good response times and is easy to use.

10.5 IMPLICATIONS FOR FURTHER RESEARCH

There are several exciting opportunities for further research in this, and related areas.

While the main focus of this research was testing the modified virtual community success model within the general population, cross-cultural analysis would be beneficial. Most respondents to this study indicated that they resided in either the United States of America or Australia. There would be value in conducting research focused on the differences and similarities in perceptions between various cultural groups. For instance, the model could be tested utilising comparable sample populations in both Australia and Asia or Australia and India.

There are also opportunities to conduct longitudinal studies. For instance, researchers could investigate whether perceptions regarding the factors that influence online success change over time or as members become more experienced at using the internet.

Moreover, there are opportunities to conduct a range of comparison studies. For example, studies could focus on the differences in the factors that influence success between age groups, genders or community types.

The richness of the data gathered in response to the open-ended question, Question 19 (Appendix G), also suggests that qualitative research exploring the factors that influence
online community success has the potential to make a valuable contribution to this research area.

Alternatively, there is currently no sampling frame which provides a random sample of Internet users (Kraut, et al 2004). The gap presents itself as a research opportunity.
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APPENDIX A

ETHICS APPROVAL

From: ‘Kaye Goldenberg’ <KGOLDENBERG@groupwise.swin.edu.au>
To: ‘Sivakumaran Muthaly’ <SMuthaly@groupwise.swin.edu.au>; <leannet@vicnet.net.au>
Cc: ‘Resethics’ <Resethics@groupwise.swin.edu.au>; ‘Toby Harfield’
<THarfield@groupwise.swin.edu.au>
Subject: SUHREC Project 2009/038 Ethics Clearance

Date: Friday, 31 July 2009 11:17 AM

To: A/Prof Siva Muthaly, FBE / Ms Leanne Trembath
CC: Dr Toby Harfield, FBE

Dear Prof Muthaly and Ms Trembath,

SUHREC Project 2009/038 What makes online communities successful? An empirical study of the socio-technical approach
A/Prof Siva Muthaly, FBE / Ms Leanne Trembath
Approved Duration: 15/08/2009 To 01/08/2010

I refer to the ethical review of the above project protocol undertaken on behalf of Swinburne's Human Research Ethics Committee (SUHREC) by SUHREC Subcommittee (SHESC4) at a meeting held on 10 July 2009. Your responses to the review, as e-mailed on 30 July 2009 were found to be acceptable.

I am pleased to advise that, as submitted to date, the project has approval to proceed in line with standard on-going ethics clearance here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.

- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.

- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.

- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.

- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance, citing the SUHREC project number. Please retain a copy of this clearance email as part of project record-keeping.

Best wishes for the project.

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Yours sincerely

Kaye Goldenberg
Secretary, SHESC4

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APPENDIX B

ONLINE SURVEY

What makes online communities successful?

You are invited to participate in a research project that looks at 'What makes online communities successful?'

You can participate in the project by completing the online questionnaire about the social and technological features that contribute to a successful online community.

By participating in this research you might find that you will learn something about why you like your favourite online community. It is expected that up to 300 members of a variety of online communities will volunteer to participate in the study.

This questionnaire should take approximately 5 minutes to complete.

You will not be asked for any personal information that could identify you. This ensures your anonymity, confidentiality and privacy.

Findings from the study, using aggregated data, will be reported in my thesis and possibly some co-authored academic publications. The thesis will be submitted as partial fulfilment of a Professional Doctorate in Business Administration at Swinburne University of Technology.

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Tel (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au

If you would like to assist us by completing the survey, please click on the start button below.
<table>
<thead>
<tr>
<th></th>
<th>I am at least 18 years old and I agree to participate in this project.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>I am a member of an online community.</td>
</tr>
<tr>
<td></td>
<td>yes</td>
</tr>
</tbody>
</table>
3. Please indicate how long you have been using the internet.

- [ ] less than 1 year
- [ ] 1-2 years
- [ ] 3-5 years
- [ ] more than 5 years

4. Consider one online community that you belong to (for example Facebook, Ning, My Connected Community). Please indicate how long you have been a member.

- [ ] less than 1 year
- [ ] 1-2 years
- [ ] 3-5 years
- [ ] more than 5 years

5. How many online communities do you belong to?

- [ ] 1-5 online communities
- [ ] 6-10 online communities
- [ ] more than 10 online communities

6. Which online community application do you use the most?

- [ ] Facebook
- [ ] My Connected Community (MC2)
- [ ] MySpace
- [ ] Yahoo groups
- [ ] Ning
- [ ] [ ]

7. How often do you usually visit the site each day?

- [ ] I visit once a day
- [ ] I visit several times a day
- [ ] I log on in the morning and stay logged on all day
- [ ] I don't visit the site every day
8. Select one response to each statement.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>About half the time</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Application name provided in Q6&gt; operates reliably.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>&lt;Application name provided in Q6&gt; is easy to use.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

9. What type of community is the <Application name provided in Q6> online community?

- ☐ Community of place (Members typically share common physical location eg town or region)
- ☐ Community of interest (Members typically share a common personal interest eg hobby)
- ☐ Community of purpose (Members typically share common purpose eg saving whales)
- ☐ Community of practice (Members typically share expertise such as techniques or knowledge)
- ☐ Other
10. Select one response to each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Sometimes</th>
<th>About half the time</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other people in the online community respond to my requests quickly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information provided by the other members of the online community is accurate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information provided by other members of the online community is up to date.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information provided within the online community is relevant to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The content provided by community members is well presented by &lt;Application name provided in Q6&gt;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am able to contribute to discussions within the online community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The other online community members have useful things to contribute.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The other online community members are only concerned about themselves.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. Select one response to each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Sometimes</th>
<th>About half the time</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>The other online community members try hard to be fair in dealing with each other.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The behaviour of other online community members is erratic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I find belonging to the online community useful.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in the online community has helped me gain respect from other community members.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Using the online community enables me to share knowledge with other community members.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in online community has helped me develop warm relationships with the other online community members.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a strong sense of belonging to the online community.</td>
<td></td>
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</tr>
<tr>
<td>I enjoy being a member of the online community.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. Select one response to each statement.

I am very committed to the online community.
The other members seem to enjoy belonging to the online community.
I use the online community for a variety of purposes.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

13. Select one response to each statement.

Using the online community helps to satisfy my information needs.
Overall, I am satisfied with the online community.
Using the online community helps to satisfy my social needs.
Overall, participation in the online community has been an unsatisfactory experience.

<table>
<thead>
<tr>
<th>Never</th>
<th>Sometimes</th>
<th>About half the time</th>
<th>Most of the time</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

191
14. Select one response to each statement.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Strongly disagree" /></td>
<td><img src="image" alt="Disagree" /></td>
<td><img src="image" alt="Undecided" /></td>
<td><img src="image" alt="Agree" /></td>
<td><img src="image" alt="Strongly agree" /></td>
</tr>
<tr>
<td><img src="image" alt="Strongly disagree" /></td>
<td><img src="image" alt="Disagree" /></td>
<td><img src="image" alt="Undecided" /></td>
<td><img src="image" alt="Agree" /></td>
<td><img src="image" alt="Strongly agree" /></td>
</tr>
<tr>
<td><img src="image" alt="Strongly disagree" /></td>
<td><img src="image" alt="Disagree" /></td>
<td><img src="image" alt="Undecided" /></td>
<td><img src="image" alt="Agree" /></td>
<td><img src="image" alt="Strongly agree" /></td>
</tr>
<tr>
<td><img src="image" alt="Strongly disagree" /></td>
<td><img src="image" alt="Disagree" /></td>
<td><img src="image" alt="Undecided" /></td>
<td><img src="image" alt="Agree" /></td>
<td><img src="image" alt="Strongly agree" /></td>
</tr>
</tbody>
</table>

I believe it is worthwhile for me to continue to participate in the online community.
I am willing to have a say in how the online community operates.
I am willing to communicate with other members of the online community.
I am very likely to continue to participate in the online community in the future.
15. Please indicate your gender
   ☐ male  ☐ female

16. Please indicate your age group
   ☐ 18 - 25  ☐ 26 - 50  ☐ over 50

17. What country do you live in?
   ☐ Australia  ☐ UK  ☐ US  ☐ New Zealand  ☐ Other

18. What Australian state or territory do you live in?
   ☐ NSW  ☐ Victoria  ☐ Queensland  ☐ SA  ☐ WA  ☐ Tasmania  ☐ NT  ☐ ACT
19. Are there any additional comments you would like to make about what you think makes online communities successful?

Thank you for your participation in this research. It is greatly appreciated.

At the completion of this study, a brief summary report of the results will be produced. If you would like to receive a copy of the report, please contact the research supervisor Associate Professor Siva Muthaly at the Faculty of Business and Enterprise, Swinburne University on +61 3 9214 5885 or by email at smuthaly@swin.edu.au
APPENDIX C

INFORMATION AND INFORMED CONSENT STATEMENT

What makes online communities successful?

I am currently undertaking research for my Professional Doctorate in Business Administration in the Faculty of Business and Enterprise at Swinburne University of Technology.

I am interested in studying the interrelationships between the social and the technical factors that contribute to a member’s satisfaction with an online community.

By participating in this research you might find that you will learn something about why you like your favourite online community. It is expected that up to 300 members of a variety of online communities will volunteer to participate in this study.

This questionnaire should take about 5 minutes to complete. You will be asked for personal information that cannot identify you ensuring your anonymity, confidentiality and privacy. Findings from the study, using aggregated data, will be reported in my thesis and possibly some co-authored academic publications.

Agreeing to complete this questionnaire is taken as your Informed Consent. Informed Consent means you agree that your participation is voluntary and you understand that you are free to stop answering the questions at any time. Only answers from completed questionnaires will be used in this study.

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APPENDIX D

INFORMATION AND INFORMED CONSENT STATEMENT: (ONLINE VERSION)

What makes online communities successful?

You are invited to participate in a research project that looks at 'What makes online communities successful?'

You can participate in the project by completing the online questionnaire about the social and technological features that contribute to a successful online community.

By participating in this research you might find that you will learn something about why you like your favourite online community. It is expected that up to 300 members of a variety of online communities will volunteer to participate in the study.

This questionnaire should take approximately 5 minutes to complete.

You will not be asked for any personal information that could identify you. This ensures your anonymity, confidentiality and privacy.

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If you would like to assist us by completing the survey, please click on the start button below.
APPENDIX E

EMAIL INVITATION TO PARTICIPATE IN RESEARCH

This email is being sent to invite you to participate in a research project called ‘What makes online communities successful?'

I am interested in studying the interrelationships between the social and the technical factors that contribute to a member’s satisfaction with an online community.

You can volunteer to participate by completing the online questionnaire about the social and technological features that contribute to a successful online community.

It should take approximately 5 minutes to complete.

To participate in this study you are required to be 18 years of age, or older and be a member of at least one online community.

To find out more about the research go to http://opinio.online.swin.edu.au/s?s=5338

Leanne Trembath
DBA Candidate
Faculty of Business & Enterprise
Swinburne University of Technology
APPENDIX F

INTER-ITEM CORRELATION MATRIXES

Table 1: Inter-item correlation matrix - Information quality

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>IQ1</th>
<th>IQ2</th>
<th>IQ3</th>
<th>IQ4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information quality</td>
<td>IQ1</td>
<td>1.000</td>
<td>.635</td>
<td>.517</td>
<td>.452</td>
</tr>
<tr>
<td></td>
<td>IQ2</td>
<td>.635</td>
<td>1.000</td>
<td>.520</td>
<td>.477</td>
</tr>
<tr>
<td></td>
<td>IQ3</td>
<td>.517</td>
<td>.520</td>
<td>1.000</td>
<td>.530</td>
</tr>
<tr>
<td></td>
<td>IQ4</td>
<td>.452</td>
<td>.477</td>
<td>.530</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 2: Inter-item correlation matrix – System quality

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>SQ1</th>
<th>SQ2</th>
<th>SQ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>System quality</td>
<td>SQ1</td>
<td>1.000</td>
<td>.556</td>
<td>.210</td>
</tr>
<tr>
<td></td>
<td>SQ2</td>
<td>.556</td>
<td>1.000</td>
<td>.294</td>
</tr>
<tr>
<td></td>
<td>SQ3</td>
<td>.210</td>
<td>.294</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 3: Inter-item correlation matrix – Member satisfaction

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>MS1</th>
<th>MS2</th>
<th>MS4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member satisfaction</td>
<td>MS1</td>
<td>1.000</td>
<td>.562</td>
<td>.209</td>
</tr>
<tr>
<td></td>
<td>MS2</td>
<td>.562</td>
<td>1.000</td>
<td>.426</td>
</tr>
<tr>
<td></td>
<td>MS4</td>
<td>.209</td>
<td>.426</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Table 4: Inter-item correlation matrix – Sense of belonging

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>SB1</th>
<th>SB2</th>
<th>SB3</th>
<th>SB4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of belonging</td>
<td>SB1</td>
<td>1.000</td>
<td>.609</td>
<td>.795</td>
<td>.267</td>
</tr>
<tr>
<td></td>
<td>SB2</td>
<td>.609</td>
<td>1.000</td>
<td>.592</td>
<td>.382</td>
</tr>
<tr>
<td></td>
<td>SB3</td>
<td>.795</td>
<td>.592</td>
<td>1.000</td>
<td>.337</td>
</tr>
<tr>
<td></td>
<td>SB4</td>
<td>.267</td>
<td>.382</td>
<td>.337</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 5: Inter-item correlation matrix – Member loyalty

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>ML1</th>
<th>ML2</th>
<th>ML3</th>
<th>ML4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member loyalty</td>
<td>ML1</td>
<td>1.000</td>
<td>.386</td>
<td>.539</td>
<td>.671</td>
</tr>
<tr>
<td></td>
<td>ML2</td>
<td>.386</td>
<td>1.000</td>
<td>.501</td>
<td>.329</td>
</tr>
<tr>
<td></td>
<td>ML3</td>
<td>.539</td>
<td>.501</td>
<td>1.000</td>
<td>.615</td>
</tr>
<tr>
<td></td>
<td>ML4</td>
<td>.671</td>
<td>.329</td>
<td>.615</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 6: Inter-item correlation matrix – Trust

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>TR1_</th>
<th>TR2</th>
<th>TR4</th>
<th>TR5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>TR1</td>
<td>1.000</td>
<td>.435</td>
<td>.242</td>
<td>.165</td>
</tr>
<tr>
<td></td>
<td>TR2</td>
<td>.435</td>
<td>1.000</td>
<td>.464</td>
<td>.411</td>
</tr>
<tr>
<td></td>
<td>TR4</td>
<td>.242</td>
<td>.464</td>
<td>1.000</td>
<td>.416</td>
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<tr>
<td></td>
<td>TR5</td>
<td>.165</td>
<td>.411</td>
<td>.416</td>
<td>1.000</td>
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</tbody>
</table>

Table 7: Inter-Item correlation matrix – Social usefulness

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item ID.</th>
<th>SU1</th>
<th>SU2</th>
<th>SU3</th>
<th>SU4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social usefulness</td>
<td>SU1</td>
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<td>.323</td>
<td>.562</td>
<td>.364</td>
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<td>SU2</td>
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<td>1.000</td>
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<td>.527</td>
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<tr>
<td></td>
<td>SU3</td>
<td>.562</td>
<td>.505</td>
<td>1.000</td>
<td>.529</td>
</tr>
<tr>
<td></td>
<td>SU4</td>
<td>.364</td>
<td>.527</td>
<td>.529</td>
<td>1.000</td>
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</table>